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Precursor to the TRICARE Next Generation Program

A Graduate Management Project Submitted

to Dr. Karin W. Zucker, J.D.

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Disclosure

The assumptions, opinions, or assertions expressed in this publication are the private view of the author and do not reflect the official policy or position of the Department of the Air Force, Department of Defense, or the U.S. Government

Abstract

The TRICARE Next Generation Program (T-NEX) will be fully implemented in 2004 and will create significant changes at the military treatment facility level. Military treatment facilities will be required to develop comprehensive business plans that fully document their accountability and responsibility in providing care for enrolled beneficiaries. Wilford Hall Medical Center is located in the San Antonio multiple-service-area-market within the newly designated South region. Within San Antonio, the Air Force operates Wilford Hall Medical Center, Randolph Clinic, and Brooks City-Base Clinic and the Army operates BAMC Medical Center, as well as several smaller troop medical clinics. Wilford Hall has been designated as the multi-market manager and, as such, will be expected to formulate one consolidated business plan for the San Antonio market area. This study seeks to create a service-area profile specific to the 59th Medical Wing, Wilford Hall and to assist with developing a picture of how resources are presently used to meet the needs of the population. It contains a structural proposal to go forth to manage this market area. Demographic information for beneficiaries accessing care at Wilford Hall Medical Center was gathered utilizing data gleaned from the TRICARE Operations Center and customized queries from the Composite Health Care System. Results from a recent data envelopment analysis study were summarized to reveal trends in efficiency levels for Wilford Hall Medical Center. The paper concludes with the observation that current market management efforts are not sufficiently bold or far-reaching. Through the focused efforts of a revised Bexar County Community Health Collaborative, San Antonio could become an ideal community for delivering medical care in a cost effective way, on time and on target, with the goals that were set forth in healthier communities.

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INTRODUCTION

The medical services of the Army, Navy, and Air Force comprise what is known as the military health system (MHS). The sheer enormity of the MHS is without dispute. The system is tasked with the responsibility to provide medical services and support to a population estimated at 8.7 million and is comprised of active duty military, their dependents, military retirees, and other eligible beneficiaries (DoD NR 616-03, 2003). In 1999, the system operated approximately 450 medical treatment facilities (MTFs) that included 91 hospitals and 374 clinics in locations within the continental United States and abroad (RAND RB 7551, 2002). Until 1956, MTFs were the sole source of care for beneficiaries. However, a 1956 Congressional enactment, Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), provided for governmental funding of civilian care to supplement MTF capabilities (Anderson & Hosek, 1994). This precedent continues today. Care provided by MTFs is supplemented by TRICARE; a Congressionally mandated program of the Office of the Assistant Secretary of Defense / Health Affairs (OSD / HA) that joins the MHS and networks of civilian providers through regional contracting with civilian managed care organizations (RAND RB 7551, 2002).

The majority of care for eligible beneficiaries is provided within MTFs. When measured in terms of number of visits, direct care within MHS facilities has historically been afforded for two-thirds of the beneficiary population, with active duty personnel utilizing the most health care services (2002). For fiscal year 2001, the MHS was funded at $18 billion, of which $5 billion was budgeted for private sector care through TRICARE contracting (GAO, 2001).

Ostensibly, the MHS appears similar to many other managed care organizations, albeit rather complex ones. However, the mission of the MHS makes the organization a unique entity (RAND RB 7551, 2002). In addition to the provision of medical care to designated

beneficiaries, the MHS has a readiness mission to remain prepared and ready to provide support to armed forces during military operations. On the home front, MTFs keep the war fighters healthy and able to perform while providing peace of mind that medical needs of family members are met. Additionally, MTFs conduct training and deploy equipment and personnel as needed to support wartime, peacekeeping, or humanitarian operations (2002). As these missions rely on the same medical personnel, the human resource challenge to the MHS is readily apparent (2002). Further adding to the complexities of MHS resource management are loss of continuity and expertise due to military staffing turnover; restrictive and sometimes unpredictable, governmental mandates; and a highly mobile population base which interferes with the ability to provide longitudinal care for individual patients at the fixed facility level (Anderson & Hosek, 1994).

Conditions that Prompted the Study

Persistent funding shortfalls, instability within the program, and other administrative challenges within TRICARE have highlighted the need for a new managed care program (GAO, 2001). The TRICARE Next Generation Program (T-NEX), a result of efforts by the Assistant Secretary of Defense for Health Affairs and the Defense Medical Oversight Committee (GAO, 2001), will be fully implemented in 2004. Under T-NEX, the number of regions in the continental United States will be reduced from 11 to 3. The newly aligned regions, TRICARE North, South, and West will each have one primary contractor for the development and operation of health networks. These contractors, Health Net Federal Services, Humana Military Healthcare Services, and TriWest Healthcare Alliance Corporation, will provide care that meets governmentally mandated access standards and will have to implement cost-effective network and patient-level management techniques (DoD NR 616-03, 2003). Health management will be

demonstrated by measurable quality improvements, population health parameters, and utilization rates (TRICARE, 2003). Incentives designed to enhance overall customer satisfaction with care have been provided for in the contracts (DoD NR 616-03, 2003). Specific target areas for incentives include telephone access, claims payment, and medical outcomes (2003).

In addition to changes in the civilian care network, T-NEX will create significant changes at the MTF-level. These facilities will be required to develop business plans that fully document their accountability and responsibility in providing care for enrolled beneficiaries (Wasneechak, 2003). These plans must specify responsibilities for care provided within the MTF, as well as care that will be purchased in the civilian networks and will be submitted to each MTF's respective service, i.e. military department. The services, in turn, will submit consolidated business plans to the TRICARE Management Activity (TMA). Business plans will serve as binding agreements between each service and TMA and will become a source document for expected MTF cost and workload projections (2003). As they will serve as the basis for the resourcing of individual MTFs, business plans must be realistic and accurate (2003).

T-NEX will also require output-based performance measures to ensure accountability within each MTF. Commanders of MTFs will be held accountable for performance at the local level and service surgeons general will be held accountable for their service-specific MTFs (Lupo, 2003). Performance measures will also be used to promote efficient resource utilization and quality results (Wasneechak, 2003). Performance measures, based upon the business plan, will be monitored on a routine basis to ascertain whether decisions regarding resources and the execution of business plans are appropriate (2003).

In some instances, such as when a multiple-service market area exists, one business plan will be shared among several MTFs. A multiple-service market area is one in which more than

one military service is present in an area that has multiple MTFs located in overlapping markets. Wilford Hall Medical Center (Wilford Hall) is located in the San Antonio multiple service area market within the newly designated South region. Within San Antonio, the Air Force operates Wilford Hall, Randolph Clinic, and Brooks City Base Clinic and the Army operates Brooke Army Medical Center (BAMC) as well as several smaller troop medical clinics. Wilford Hall has been designated as the multi-market manager and as such will be expected to formulate one consolidated business plan for the San Antonio market area (Lieutenant Colonel A.A. Edward, Commander of the 759th Medical Support Squadron at Wilford Hall, personal communication on September 19, 2003). Diligent planning efforts will be needed for T-NEX implementation at Wilford Hall and initial data gathering will be necessary before a comprehensive business plan can be developed.

According to Anderson & Hosek (1994), lack of planning can sabotage a managed care program. Understanding the beneficiary population and resource requirements are essential elements of the planning process. Bruce & Langdon (2000) refer to the customer as the true driving force behind the success of any strategic plan; and Ginter, Swayne, & Duncan (2002) consider target market analysis necessary in all elements of the value chain[1] that provide services. Why and how patients seek care must form a basis for the implementation of managed care efforts. Unless the needs and resource requirements of a population are known, care will only be provided, not managed. To accomplish true management of care, data analysis is necessary at all stages of the process (Anderson & Hosek, 1994). Information on population characteristics must be analyzed to determine health care services sought, resources utilized to

[1] The value chain consists of those health care organizational activities which ensure "access to, provision of and follow-up for health services" and activities that "aid in the efficient and effective delivery of health services" (Ginter, Swayne, & Duncan, 2002, p. 143).

render care, and the cost of those resources (1994). Data must also be gathered to allow determination of efficiencies or inefficiencies within the health delivery system.

Statement of the Problem

Personnel of Wilford Hall must gather baseline data on the present market area and in-house efficiency levels to serve as a precursor for the formulation of a business plan. This study seeks to create a service-area profile specific to Wilford Hall and to assist in developing a basic understanding of how resources are presently used to meet the needs of the population. It will conclude by proposing a structural proposal for managing this market area.

Literature Review

Civilian Health and Medical Program Uniformed Service (CHAMPUS)

The military's first experience with contracting for health care services to supplement its direct health care system dates back to the 1950s. In response to concerns regarding access to care for military-affiliated beneficiaries, Congress enacted CHAMPUS in 1956 to improve the provision of medical treatment by allowing beneficiaries to seek government-funded care in the civilian sector. The program was supplemental in nature and was intended to provide civilian-sector care only to the extent that services were not available in an MTF (Anderson & Hosek, 1994). Under the administration of Office of the Assistant Secretary of Defense, Health Affairs (OSD / HA), early benefits and allocations for the CHAMPUS program were consistent with civilian-sector, indemnity, insurance plans. Beneficiaries were required to pay deductibles and co-payments with CHAMPUS compensating providers for amounts incurred in excess of established beneficiary payments (RAND, 1999). The basic CHAMPUS program remained in effect without any significant changes until exponentially rising costs for civilian-sector care combined with increasing dissatisfaction of beneficiaries, prompted the introduction of a set of

reforms in 1987 (1999). The reforms, referred to as the CHAMPUS Reform Initiative, were partially modeled after the civilian managed care plans that were coming of age in the health care industry (Kongstvedt, 2001; RAND, 1999). The stated goals of the initiative were to reduce program costs while enhancing beneficiaries' access to and satisfaction with care (1999). This initiative, which was launched officially the same year as proposed, was approved for implementation as a 5-year demonstration project (1999).

The Champus Reform Initiative was intended to increase the satisfaction of beneficiaries by providing benefit plan options, lowering out-of-pocket expenses, and expanding coverage for preventative services. Beneficiaries were offered two basic coverage options: CHAMPUS Prime, a network style health maintenance organization option that required the least out-of-pocket expense; and CHAMPUS Extra, a preferred provider option which increased patient choice for providers in return for slightly higher co-payments (1999). On the whole, out-of-pocket payments for either CHAMPUS Reform Initiative option were lower than the amounts required under the original CHAMPUS program (1999).

Despite the more generous benefit terms, developers of the CHAMPUS Reform Initiative anticipated realization of cost savings by transferring some of the risk associated with providing care to the civilian contractor, thus providing an incentive for the efficient use of resources. The contractor was expected to draw on the efficiencies of widely used and accepted managed care techniques such as comprehensive utilization review and coordination of care (Kongstvedt, 2001; Anderson & Hosek, 1994). An independent evaluation by the RAND Corporation of the program at the 2-year mark revealed that while beneficiaries had greater access to care and experienced increased satisfaction levels, anticipated cost savings did not materialize with costs actually increasing by 8% over the period (RAND. 1999). According to RAND's analysis, the

inability to control costs may have been partially attributed to the demonstration project's curt 6-month implementation period (1999).

The project, while not considered a stunning success, proved to be an invaluable source of reference for the MHS. The primary lessons gleaned included the need for detailed planning, the importance of hiring and training experienced personnel, and the need for adequate time to conduct testing of processes and procedures, with the ability to make adjustments to the system as necessary (1999). The MHS' next major endeavor, the development and implementation of TRICARE, attempted to make use of these indispensable lessons from CHAMPUS Reform Initiative.

TRICARE

The 1990s marked a turbulent period for the United States military in general, and the medical services were not left unaffected. A drastic downsizing of military forces followed the Gulf War in 1991. After a very brief period of stabilization, the country's medical costs were on the rise again (Kongstvedt, 2001). In the face of severe budgetary constraints, the DoD needed to find a way to control the escalating costs of the MHS while continuing to improve access to quality health care services (GAO, 2001). TRICARE was the vehicle chosen to accomplish these objectives.

TRICARE involves the contractual association between the military's direct care system and selected civilian managed care support organizations. The purpose of this association is to augment capabilities of MTFs and provide beneficiaries with reliable sources of quality medical care. The TRICARE Management Authority (TMA), operating under delegated authority from OSD / HA, is responsible for procurement and administration of the program (TRICARE, 2003). Acting within this authority, TMA has awarded seven contracts to five different contractors that

cover 11 established geographic regions (GAO, 2001). In addition to developing civilian health care networks to supplement capabilities of MTFs, managed care support contractors are charged with managing the care of beneficiaries through the use of established techniques such as utilization management and quality management (GAO, 2001; TRICARE 2003).

Contract administration for TRICARE presents a daunting challenge for both the TMA and the contractors due to the enormous dollar amounts involved, $5 billion in fiscal year 2001, and the program's contractual goals. Contractual provisions are designed to promote efficiency in health care delivery and to maximize health care benefits while providing protection for the continued viability of contractors. These contractors are at risk for costs within their control such as administrative expenses through the use of fixed-price contracts (GAO, 2001). Full risk for medical care cost overruns are assumed by contractors up to a designated percentage based upon health care prices. Once this percentage is exceeded, managed care support contractors and the government share in any losses incurred (2001). These contractors are protected from exorbitant loss because the maximum amounts for which they may be held liable, referred to as contractor's equity, is pre-pledged in the contract. Once contractor equity has been spent, the government assumes full responsibility for all additional losses (2001). Further, adjustments to contractual payments are built in to protect contractors from cost increases that are beyond their control. For example, periodic bid price adjustments are made to correct for changes in expected workload between MTFs and contractors and variations in overall numbers of beneficiaries due to the highly mobile life-style of military families, as well as to account for increases in the inflation rate (2001).

TRICARE's goals for increased access and enhanced beneficiary satisfaction are realized through the program's benefit structure. Under the provisions of TRICARE, beneficiaries may

choose among three alternative plans. TRICARE Prime, the only alternative that requires members to formally enroll, is a health maintenance organization-type option where all or nearly all care is received in an MTF (GAO, 2001). Prime requires no co-payment by the patient as long as care is provided within the military system. TRICARE Extra, a preferred-provider network option, requires only a minimal co-payment by the patient. TRICARE Standard, the least restrictive of the three options in terms of choice of health care provider and care management, offers a fee-for-service arrangement. With increased choice, however, comes increased out-of-pocket expense for the patient. Co-payments are highest for Standard option, although, by civilian-sector standards, the rates are comparatively low (2001). Beneficiaries are satisfied with the choices and provision of care under TRICARE. According to the GAO, 90% of beneficiaries reported satisfaction with overall quality of care and over 80% were satisfied with access to care in 2001.

Instability within TRICARE

In recent years, persistent funding shortfalls, instability within the program, and other administrative challenges have highlighted the need for a new managed care program (GAO, 2001). Challenges in the administration of the TRICARE program existed from the start. This was primarily because major military downsizing and realignment efforts that were ongoing during the contract award period in the early 1990s made definitive and accurate financial and programmatic planning all but impossible.

Following the end of the Cold War, national defense strategy changed and officials became concerned that the military structure was too large and unwieldy to meet the post-Cold War challenges (DoD, 1998). The DoD needed to divest itself of excess capacity to make certain that the military's "structure facilitate[d], rather than impede[d], the transformation of our

military" (1998, p. i.). The Defense Base Closure and Realignment Commission was created in 1988 and given that mandate. It concluded with a recommendation to close 16 major military installations. Subsequently, the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) provided authorization for three additional rounds of base closures and realignments to occur in 1991, 1993, and 1995. In total, the efforts of these four commissions resulted in the closure of 97 major military installations and impacted several hundred smaller defense facilities (1998).

Base closures and realignments impacted the MHS in two significant ways. First, they shifted patient population levels in terms of geographic locations and source of care. Interestingly, overall numbers of those entitled to care remained relatively stable (Scarborough, 1999). A sizable number of military personnel and their dependents were reassigned from closing or realigned bases to other installations. MTFs at the receiving installations experienced increased workload. At the same time that workload shifted, medical service realignments resulted in reduced capabilities and a more limited enterprise-wide ability to provide medical services. The population shifts and reduction in MTF capabilities, without an offsetting reduction in overall numbers of beneficiaries, caused greater than expected reliance on civilian care networks (GAO, 2001). Frequent adjustments to contracts and reimbursement levels had to be made to account for the changes in populations of patients and in the capabilities of the system. These created programmatic instability and resulted in higher costs than anticipated.

TRICARE's financial woes cannot be solely blamed upon force restructuring. Financial concerns have continuously plagued the system into the 2000s, even though the last round of base closures and realignments occurred in 1995. In fiscal year (FY) 2000, the DoD requested an additional $1.3 billion in funding from Congress. A supplemental funding request in FY

2001was higher still. Over time, the continuing need for supplemental appropriations has created increased congressional scrutiny of DoD's financial management and its ability to provide accurate budget forecasting (GAO, 2001).

In addition to instability caused by closure and realignment of bases, the TRICARE program has been affected by new legislation that has changed the rules of eligibility and benefits. One piece of legislation, in particular, has had far-reaching implications. The FY 2001 National Defense Authorization Act became effective as Public Law 106-398 on October 30, 2000. Under this Authorization Act, TRICARE for Life was established as an entitlement program. It restored medical benefits to Medicare-eligible, retired DoD beneficiaries who are enrolled in Medicare Part B. At the time of enactment, approximately 1.4 million persons were potentially eligible for coverage under TRICARE for Life (TRICARE News Release 01-10, 2001). Another 2001 Authorization Act program that affected the same 1.4 million beneficiaries was TRICARE Senior Pharmacy. This program mandate contained provisions for retired military beneficiaries over the age of 65 to receive low cost prescription medications from a variety of sources to include the TRICARE mail order pharmacy, TRICARE network and non-network pharmacies, and MTF pharmacies (DoD NR 137-01, 2001). Senior Pharmacy took effect on April 1, 2001. A third significant change under the Act was the elimination of co-payments for active duty family members who are enrolled in TRICARE Prime. Studies concerning experience with managed care have consistently shown that lower out-of-pocket expenses for health care are associated with higher rates of utilization (Jacobs & Rapoport, 2002).

By June 30, 2000, over 1000 change orders, representing unscheduled modifications to TRICARE contracts, had been issued; and a significant backlog in the funding and processing of

these change orders existed (GAO, 2001). This represented an average of 165 changes per contract (2001). The scope of modifications ranged from simple changes in billing procedures for home health care to significant expansion of offered benefits, as detailed previously (2001). Complicating the frequency of unscheduled modifications were the scheduled changes that were built into the TRICARE contracts. These changes were those for bid price adjustment to account for changes in workload and other operating conditions and, at the behest of contractors, requests for equitable adjustment to account for any other unforeseen occurrences (2001).

This instability and the administrative complexities of TRICARE have resulted in numerous complaints from managed care support contractors currently involved with the program. The amount of compensation awarded for bid price adjustments and equitable adjustments has been contested. These contractors do not trust the data quality of DoD information systems that provide critical workload data on which determinations used in financial calculations are based (2002). Moreover, they are frustrated with the complex and prescriptive nature of the program that hampers the opportunity for innovation (2001).

According to testimony in May of 2001, before the House of Representatives Committee on Armed Services, Subcommittee on Military Personnel, by the Director of Health Care for Veteran's and Military Health Care Issues, Stephen Backhus, the present TRICARE contracts are too large. He further testified that they are too prescriptive in nature, limiting potential benefits to be derived from competition or innovation (2001). Efficiencies are needed and can be obtained by a system that provides financial incentives, accountability, and enhanced data quality (2001). Due to multiple concerns about TRICARE and the MHS, the Under Secretary of Defense, Personnel and Readiness, David S.C. Chu, commissioned a study of the organization of the MHS by RAND (RAND RB 7551, 2001). Hosek and Cecchine released the research study,

Reorganizing the Military Health System: Should There Be a Joint Command? in 2001. While the authors gave no definitive answer as to whether a complete reorganization of the MHS should be undertaken, they did conclude with a recommendation for the reorganization of TRICARE (2001).

TRICARE Next Generation

The 2004 implementation of the TRICARE Next Generation (T-NEX) is a result of efforts by OSD / HA and the Defense Medical Oversight Committee (GAO, 2001). According to Backhus, a unique challenge of T-NEX will be to make the contracts sufficiently "flexible to maintain a balance between DoD's goal of providing uniform benefits nationwide [and] the realization that the delivery of health care is local" (GAO, 2001, p. 11). T-NEX will need to strike a sufficient balance between basic uniform benefits without stifling innovation and competition. Stated objectives of the contracts include familiar goals such as optimization of the direct care system and beneficiary satisfaction with the addition of newer goals such as implementing best commercial practices, allowing only minimal disruption during transition, and permitting governmental access to data (Lupo, 2003).

The most noticeable changes under T-NEX are structural in nature. The number of regions in the continental United States will be reduced from 11 to 3. The newly aligned regions, TRICARE North, South, and West will each have one primary contractor for the development and operation of health networks. These contractors are Health Net Federal Services, Humana Military Healthcare Services, and TriWest Healthcare Alliance, respectively (DoD NR 616-03, 2003). For the approximately 1.7 million beneficiaries that are eligible for both Medicare and T-NEX, a separate contract, the TRICARE Dual Eligible Fiscal Intermediary Claims Contract (TDEFIC), has been awarded to better meet needs. This contract covers

administration, claims processing, and customer service needs that were addressed by regional managed care support contractors under TRICARE (TRICARE NR 03-15, 2003). In keeping with lessons learned from CHAMPUS Reform Initiative and with the objective for minimal disruption, T-NEX will have a 9-month implementation period. TRICARE North, South, and West regions will be phased in one at a time. TRICARE West will be the first fully operational region as of June 1, 2004, with the other regions to be completely operational by November of 2004 (DoD NR 616-03, 2003).

T-NEX will retain many core aspects of TRICARE while other features will be improved upon. For example, the structure of benefits will remain the same with options including TRICARE Prime, Extra, and Standard. Beneficiaries may still be referred to civilian providers where the full range of medical service benefits will be offered, and the civilian care network will be designed to complement existing MTF capabilities (Lupo, 2003). Network care must continue to meet governmentally mandated access standards; however, the contracts contain many new requirements for management techniques at both the network and patient care levels (DoD NR 616-03, 2003). For example, a contemporary, medical management program will be required under T-NEX. This program must include case management, utilization management, and disease management (Lupo, 2003). Health management will be demonstrated by measurable quality improvements, population health parameters, and utilization rates (TRICARE, 2003).

Improvements have also focused on helping the MHS achieve its peacetime and wartime missions. Contingency plans formulated at the MTF-level will document potential network-support requirements during deployments, military operations other than war, and training (Lupo, 2003). The plans will require that contractors be able to respond within 48-hours, and this will be tested at least bi-annually. Although by no means all-inclusive, other improvements

include requirements for contractors to comply with DoD security requirements as specified in the Health Information Portability and Accountability Act and to provide for the provision of unlimited government access to read-only TRICARE-related data (2003).

Although T-NEX contracts contain numerous requirements, an attempt has been made to eliminate rules and procedures deemed too prescriptive in the past and to encourage innovation and superior performance. Contractors are permitted to propose best practices for utilization management, credentialing, customer service, and processing of claims (Lupe, 2003). Incentives for access by telephone, payment of claims, and quality medical outcomes have been provided for in the contracts to enhance overall satisfaction with care (DoD NR 616-03, 2003).

T-NEX has far-reaching implications at the MTF level and will require dramatic changes in business processes in order to provide for integration of the military direct care system with the contracted, purchased care system (Lupo, 2003). A new resource allocation method and revised financing will ultimately revolutionize the way business has been conducted. The goals of the revised financing system are to provide incentives for MTFs to maximize in-house capacity, to encourage active care-management, and to improve management decisions by linking decisions with cost impacts (Evans, 2003). Facilities will be placed at full financial risk for almost all medical services provided to active duty and other Prime enrollees, with the exception of retail and mail order pharmacy benefits (2003). They will receive a capitated payment rate for each Prime enrollee. Fee-for-service payments based upon the Champus maximum allowable charge will be received whenever care is rendered to a beneficiary who is a TRICARE non-enrollee, an enrollee of another MTF, or an enrollee of a managed care support contract (Wolak, 2003). Likewise, MTFs will pay fee-for-service rates for care provided to their Prime enrollees at other MTFs or in the MCSC network (2003). Ideally, demand management

and care provided within the civilian care network for beneficiaries will enable MTFs to make accurate projections of funding requirements. Funding for the purchased care of Prime beneficiaries will be allocated to the MTF for management and disbursement based upon the MTF's budgetary projections in the facility's business plan (Evans, 2003).

Business plans that describe market demands, MTF resource requirements and capabilities, and civilian network requirements and capabilities will be required at the facility-level (Lupo, 2003). They must provide a detailed account of the who, what, where, and when for the provision of care to the beneficiary population for both the MTF and the local area network so that accountability will be clear (2003). The MTF's business plan must also specify performance targets with monitoring of the targets at both the facility and TMA-level to ensure positive outcomes and proper resource allocation. These plans will ultimately be utilized by TMA as the basis for MTF funding, making an accurate and detailed business plan critical to MTF's success.

Commanders of MTFs will have to be actively involved in clinical operations in order to ensure that the MTFs are providing care consistent with capacity. Unless an MTF is functioning at an optimum level, care management and cost-containment efforts under T-NEX will not be as effective. The MHS Optimization Program[2], a medical resource strategy for determining the optimal size for the military medical infrastructure, dating back to 1999, may be the MTF commander's best vehicle for reaching the efficiency levels required by T-NEX (GAO, 2001). Optimization includes the determination of where resources should be located and how they should best be used to accomplish the readiness and peacetime missions. Capacity and utilization evaluations of each MTF, make-or-buy financial analysis, identification of ideal provider mix,

[2] Optimization is a critical strategic component of the MHS' enterprise-based approach, the long view strategy, that was adopted by the MHS to support the military's Joint Vision 2020 (Colonel T.R. Rogers, Administrator, Wilford Hall, personal communication on June 15, 2004).

and manpower analysis to ascertain excess or shortages in personnel by specialty also fall under the umbrella of optimization. Under this program, significant efforts have been made to optimize the delivery of care within each MTF. Due to revised financing and other contractual requirements, the MHS' Optimization Program may now be more critical than ever.

METHODS AND PROCEDURES

A service area profile developed for the 60th Medical Group, David Grant Medical Center, Travis Air Force Base, California, has been used as a template (Edward, 1994) to create a service area profile specific to Wilford Hall. This profile explores the San Antonio geographical area and population. Demographic information for beneficiaries accessing care at Wilford Hall was gathered from the TRICARE Operations Center's database reports that are pulled from the MHS Management Analysis and Reporting Tool, better known as M2, and from customized queries of the Composite Health Care System (CHCS). Lifestyle factors potentially affecting health status and the provision of health care services were explored and resource utilization was assessed through the analysis of data for current trends in health care purchasing, in-patient care, and outpatient care.

The beneficiary population to be studied encompasses patients accessing 59th Medical Wing facilities within FY 2003 (October 2002 through October 2003). When available, data for FY 2004 were used. Eligible beneficiaries include the following categories: dependents of retirees, retirees, dependents of active duty, active duty, dependents of survivors, dependents of medically-eligible Guard and Reserve, and medically-eligible Guard and Reserve. Patients receiving care include the following beneficiary categories: active duty enrolled, active duty non-enrolled, space available under the age of 65, space available over the age of 65, TRICARE Prime, and TRICARE Plus. Patients not in one of the aforementioned categories such as students, civilians needing emergency / trauma care, and retirees not enrolled in Prime were identified, where possible, or classified as "no beneficiary category." Finally, an "other" classification was used to account for any outliers that are not included elsewhere. A breakdown by Defense Medical Information System codes was performed to determine designated

TRICARE MTFs. The following codes were among those analyzed: Brooke Army Medical Center (0109), Wilford Hall Medical Center / 59th Medical Wing (0117), 311th Medical Squadron at Brooks City-Base (0363), Kelly Clinic (0365), and the 12th Medical Group at Randolph Air Force Base (0366). Age groups were sorted by the following age ranges: 0 and 4, 5 and 14, 15 and 24, 25 and 34, 35 and 44, 45 and 54, 55 and 64, 65 and 74, 75 and 84, and 85 to 120. Gender-specific differences in health care utilization were not studied.

A brief assessment of relative efficiency levels for Wilford Hall was conducted. Matthew Goldberg of the CNA Corporation conducted data envelopment analysis[3] and regression analysis utilizing patient demographic data and data from the Medical Expense and Performance Reporting System for approximately 75 military hospitals during FY 1996 through FY 1999 (Goldberg, 2001). The study, commissioned by the Office of the Director, Program Analysis and Evaluation, was intended to assess the cost structure of MTFs and judge their relative cost efficiency in relation to each other and to civilian treatment facilities (2001). Cost elements included civilian salaries paid from operation and maintenance funds, military salaries, depreciation of capital equipment, and utilities and property maintenance expenses as estimated by each specific installation (2001). Depreciation for buildings was not included in the analysis. Costs, in dollars, were used as a single input factor for the analysis. There were six outputs measured: case-mix adjusted discharges; outpatient emergency center visits; outpatient surgical

[3] Data envelopment analysis is a linear programming application that allows comparison of similar service-units to determine relative productivity and efficiency by comparing inputs and outputs (Taylor, 2002). A basic assumption of DEA is that when a system or service is perfectly efficient, the sum of all inputs must equal the sum of all outputs. Input values are scaled to total one and output values are constrained so that they cannot be greater than one. If the results of the analysis are one, the service unit is efficient. If the result is less than that, the unit is considered inefficient (2002). This analysis is particularly useful because decision-variables are assigned relative price-per-unit costs, thereby allowing the usage of implicit prices or opportunity costs (2002). Hence, the utility of data envelopment analysis is apparent for service industries whose services do not lend themselves to traditional methods of numerical analysis as easily as manufacturing industries. For this reason, DEA has been used to compare service efficiency in the banking and restaurant industries, as well as in school systems and hospitals (2002).

center visits; other outpatient visits; graduate medical education for physicians; and total training for nurses, direct care professionals, and paraprofessionals (2001).

Generalized findings of Goldberg's study include the presence of economies of scale for both outpatient and in-patient care. This was reflected in costs that declined sharply in relation to facility size. The study also found that high costs for DoD medical centers, approximately $30 more per visit than same-sized community hospital, can be associated with graduate medical education. Regrettably, more detailed study results were not available at this time. However, M. Nicholas Coppola conducted a data envelopment analysis of military medical treatment facilities dated June of 2003. The results of this study were reviewed to help provide insight into operational efficiency levels for Wilford Hall.

SERVICE AREA PROFILE FOR THE 59th MEDICAL WING, WILFORD HALL MEDICAL CENTER

Overview of the 59th Medical Wing, Wilford Hall Medical Center

Wilford Hall was originally founded in 1942 as a military medical training post (Lozano, 2004). In the 1950s, the facility became a site for medical education and served as a treatment center for more than 30,000 casualties returned by air evacuation from the Korean War (2004). Today, as the Air Force's largest medical facility, Wilford Hall is often referred to as the "Flagship of the Air Force Medical Service." As such, it provides a unique opportunity to observe the full spectrum of military medical care. Services provided range from a home care program for new mothers and their infants to a level I trauma center. In addition to the principal in-patient structure that houses approximately 232 patient care beds and a multitude of primary and specialty care clinics, Wilford Hall operates two supplementary medical clinics, an ambulatory care facility, three dental clinics, and research facilities (2004). The medical center has over 2,000 mobility-ready personnel and maintains an active air staging facility that receives patients from all over the world on a routine basis. During Operation IRAQI FREEDOM, Wilford Hall sent over 500 medical personnel to the desert while continuing to maintain day-to-day operations and medical training. Today, there are approximately 130 Wilford Hall personnel deployed to Iraq on a 90-day rotational basis. This number is expected to increase by approximately 100 personnel before implementation of T-NEX. In addition to its vast readiness mission, Wilford Hall is the primary Air Force source for graduate medical education.

The 59th Medical Wing is a part of TRICARE Region 6, the service area for the southwestern United States. Region 6 includes all of Arkansas and Oklahoma, most of Louisiana, and all but the extreme western portion of Texas. Once regional alignment is

concluded for T-NEX, Wilford Hall will become part of TRICARE Region South, an area that encompasses all but the western-most portion of Texas and the states of Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, Tennessee, and South Carolina (Wagner, 2003). Wilford Hall is located in a multi-market service area and shares overlapping service areas with BAMC and associated area troop medical clinics, the Kelly Clinic (now a tenant organization of Wilford Hall), the 311th Medical Squadron at Brooks City-Base, and the 12th Medical Group at Randolph Air Force Base (Wagner, 2003).

The San Antonio Metropolitan Area

The 59th Medical Wing is located on the southern side of San Antonio, Texas. San Antonio is large metropolitan city spanning approximately 417 square miles and is nestled between the Texas Hill Country to the north and the gulf coastal plain to the south (San Antonio Economic Development Foundation, 2003). A well-developed highway system connects it to major Texas cities such as Houston (200 miles), Austin (70 miles), Dallas (280 miles), and Corpus Christi (145 miles) (2003). Interstate 10 leads west out of San Antonio to El Paso, ultimately connecting the city with California. On its eastward route, Interstate 10 goes through Houston, providing a connection through the southeast to the state of Florida. Interstates 35 and 37 provide access to Mexico in the south and Canada in the north. International trade, as a result of the North American Free Trade Agreement, is expanding into the local area. Two-thirds of all trade between the US and Mexico is moved through the San Antonio area on one of its many interstate highways (2003).

San Antonio is the 9th largest city in the United States and is the fastest growing region in the state of Texas (San Antonio Economic Development Foundation, 2003). Growth is expected to continue through the year 2010 at an average annual rate of 1.9% (2003). Based upon the

2000 Census and the annual growth rate, the population is estimated to be 1,251,200 in the year 2003. The population of Bexar County, in which San Antonio is located, is estimated to be 1,512,800. The combined population of Bexar, Wilson, Comal, and Guadalupe counties, all within close proximity to the metropolis, is an estimated 1,710,500 (2003). In 2002, the median age of the typical San Antonio resident was 32.9 years, and the median household income was $44,109. The majority of San Antonians are Hispanic or Latino (58.7%) followed by white (31.8%), black or African American (6.8%), and others (2.7%). Gender composition is almost evenly split with females comprising a slightly higher majority, 51.3%, than males, 48.7% (2003).

The civilian workforce is composed of approximately 788,521 workers, the majority of whom work in the services sector (San Antonio Economic Development Foundation, 2003). Employment sectors by size as measured in 2003 are services (29%); transportation, communications, and public utilities (18%); government (18%); leisure and hospitality (12%); financial activities (8%); manufacturing (6%); construction (6%); and information (3%). Some of the city's major employers with corporate headquarters located in San Antonio include the United Service Automobile Association, HEB Food Stores, SBC Telecommunications, Valero Energy, the Taco Cabana fast food chain, Frost National Bank, and the Southwest Research Institute. Leading manufacturers include Cardell Kitchen & Bath Cabinetry, Valero Energy, and Martin Marietta Materials Southwest, a manufacturer of crushed limestone, asphalt, concrete, and cement. Coca-Cola / Dr. Pepper bottling and Clarke American, a check printing company, are also located in the city. As might be expected, based upon general US economic conditions, unemployment has risen in recent years from 3.1% in 1999 to 5.6% in 2003 (2003).

Another major employer for the city is the federal government. San Antonio is home to four military installations: Fort Sam Houston, Lackland Air Force Base, Randolph Air Force Base, and Brooks City-Base. The military employs approximately 48,090 military and 25,099 civilians (San Antonio Economic Development Foundation, 2003). According to the San Antonio Economic Development Foundation, the direct economic impact of the military for San Antonio was approximately $2.95 billion in 2000 (2003).

The Environment

In 2003, San Antonio was the only major city to claim attainment of all six ambient air quality standards as established by the Environmental Protection Agency (San Antonio Economic Development Foundation, 2003). The geographical conditions and climate allow for generally good air movement, thus air pollutants are not trapped in the city's atmosphere. Additionally, non-polluting nuclear energy and clean fossil fuels provide the city with electrical power and San Antonio's industries are fueled primarily by clean-burning natural gas. Clean air has a favorable impact on population health status and quality of life for city residents. The city has a local clean air plan and city officials are in the process of creating an Early Action Compact for all counties in the region. This will help ensure that the city continues to meet Environmental Protection Agency attainment standards and residents can keep on enjoying the benefits to be derived from cleaner living (2003).

Local Health Care Industry

In 2001, the health care industry employed 15% of San Antonio's workforce at an annual payroll of $3.36 billion, making the industry the single largest contributor to the city's economy (Poling, 2003). According to an industry analyst commissioned by the Greater San Antonio Chamber of Commerce, the industry grew 5% in 2001, infusing an estimated $11.5 billion in

direct spending on health-related goods and services to the city's economy (2003). The economic impact of physicians' offices increased dramatically from 1998 to 2001, with an estimated total impact of $1.6 million (2003). The larger hospital sector grew at slower pace relative to physicians' offices, reflecting the trend toward more outpatient care and preventative services rendered in physician offices (2003). These figures do not include the University of Texas Health Science Center at San Antonio that employs over 5000 employees and has an estimated annual budget of $400 million (2003). Moreover, military medical researchers working at Brooks City-Base were not included in the analysis, although civilian workers were included (2003). A map showing locations of major medical institutions within the San Antonio metropolitan area is available in Appendix A, Figure A1.

Community Medical Initiatives

Trauma Care

The city hosts three level 1 trauma centers: University Hospital, Wilford Hall, and BAMC that provide trauma services for a 22-county area (Lozano, 2004; Reilly, 2003). MedCom, the city's centralized emergency response system, receives all ambulance or LifeFlight requests and dispatches accordingly (2004). By agreement, Code III emergency patients are routed to the nearest facility, provided that it is properly equipped and has the capacity. Roughly, 50% of trauma patients are routed to University Hospital, 25% are sent to BAMC, and the remaining 25% are sent to Wilford Hall (Masterson & Edward, 2004). Often, the availability of intensive care beds is a determining factor on whether a facility can accept or must decline emergency cases.

Prior to June of 2003, Texas law provided for the use of local county property taxes to fund trauma centers with the state providing limited grants through a tertiary-care fund (Reilly,

2003). San Antonio's trauma centers are the regional, sole source of such care for the population of 22 counties; and this system created funding problems for them (Masterson & Edward, 2004). In 2001, the University Health System (University) treated 1,140 patients from Bexar County for a total cost of $22.1 million (Reilly, 2003). However, 837 patients from outside Bexar County received trauma care at University at a total cost of $19.7 million, an amount already in excess of the state's total, statewide, grant fund (2003). In 2001, the state's fund had $16 million available and over $260 million in requests (2003). For this reason, University Health System actively lobbied the Texas State Legislature for tax-relief, resulting in the passage of House Bill 3588 that was signed into law on June 22, 2003 (Texas Legislature, 2004). Through this law, the state hopes to raise approximately $300 million for trauma centers by increasing taxes on used car sales and imposing stiffer fines for motor vehicle driving infractions (Hoppe, 2003).

San Antonio Health Care Coordinating Council

The San Antonio Health Care Coordinating Council was established in the spring of 1991 to provide an organized structure to maximize channels of communication, cooperation, and coordination between local health care entities (Lieutenant Colonel A.A. Edward, personal communication, April 6, 2004). These entities included those operating at the federal and state level; civilian providers of health care, research, and medical education; and local government officials (2004). Members included the Commanders, Chief Executive Officers, or Senior Executive Officers of Wilford Hall, BAMC, Randolph Clinic, Brooks City-Base Clinic, South Texas Veterans Health Care System (Audie L. Murphy Division), the University of Texas Health Science Center - San Antonio, and the Greater San Antonio Hospital Council (2004). The Air Force Education and Training Command Surgeon and the Directors of the TRICARE Lead Agent Region 6 and Health Net Federal Services Region 6 were also among the members (2004).

The group met quarterly and had established standing working groups to address issues such as graduate medical education, nursing, and dentistry (2004). With the implementation of new associations and focus groups over the last several years, the San Antonio Health Care Coordinating Council has faded into obscurity (Lieutenant M. Pesnell, Administrative Resident for the Greater San Antonio Hospital Council, personal communication, April 13, 2004).

Mobilizing for Action Through Planning and Partnerships (MAPP)

A community health improvement process spearheaded by the San Antonio Metropolitan Health District called Mobilizing for Action through Planning and Partnerships (MAPP) was initiated in January of 2002 (Bexar County Community Health Collaborative, 2002). It is a tool developed by the National Association of County and City Health Officials and the Center for Disease Control and Prevention that helps key officials review community health status and resources, formulate strategic issues, and develop strategic plans for identified issues (2002). Four different assessments are required to obtain information necessary to develop a comprehensive community health improvement plan with the MAPP process (San Antonio Metropolitan Health District Overview, 2002). These are the community health status assessment, the forces of change assessment, a local public health system assessment, and a community themes and strength assessment. Although the San Antonio Metropolitan Health District is a driving force behind the effort, MAPP recognizes that a multitude of entities such as hospitals, clinics, churches, and schools contribute to the health of the community (2002). Therefore, MAPP seeks to bring together as many entities as possible within the community to become partners in health improvement initiatives (2002).

The Alliance for Community Health in San Antonio and Bexar County

In 2002, over 100 individuals throughout the community were asked to participate in a newly forming working group to formulate and implement strategic planning under MAPP (San Antonio Metro Health District Alliance, 2002). This group, called the Alliance for Community Health in San Antonio and Bexar County (The Alliance) was to expand on and replace the original MAPP Core Planning Team (2002). The Alliance adopted a health vision for the community, "A safe, healthy, and educated community in which all individuals can achieve their optimum physical, cultural, social, mental, and spiritual health- today, tomorrow, and en el futuro" (San Antonio Metro Health District, 2002, n.p.) Additionally, community values were identified to assist personnel in the strategic management process (2002). Members of the Alliance include a diverse group of community representatives to include personnel from the University Health System; Methodist Health Care System; City of San Antonio, Emergency Management System; the Archdiocese of San Antonio; the Edgewood School District; Our Lady of the Lake University; City Public Service; Any Baby Can; and the American Diabetes Association (2002). A representative from the United States Air Force School of Aerospace Medicine is the only military-related representative listed on the Alliance's website (2002).

Utilizing the four reports collected as part of MAPP, the Alliance developed eight key issues. These issues include how to work together, expand on collaboration, track change, affect public policy, promote a sense of community, assure access to care, encourage healthy lifestyles, and provide a safe environment (2002). Six subcommittees were formed to begin planning for each of the strategic issues (2002). Plans were to be developed and ready for implementation by March of 2003. As of this date, information on the status of these plans is unavailable.

Bexar County Community Health Collaborative

The Bexar County Community Health Collaborative (The Collaborative), formed in 1997, is composed of both public and private organizations dedicated to the resolution of community health issues in close cooperation with the San Antonio Metropolitan Health District (Bexar County Community Health Collaborative, 2004). As such, it is a key member in the MAPP process. Efforts of The Collaborative include publication of the 2002 Health Assessment and Health Profiles in conjunction with the San Antonio Metropolitan Health Department, the formation of the Youth Depression Advisory Council, and the implementation of the Fit City / Fit Schools initiative to promote nutrition and fitness (2004). In the interest of furthering local health care needs, area health care organizations joining The Collaborative have agreed to put aside competitive business practices, when appropriate (2004). Membership includes the following organizations: University Center for Community Health, CHRISTUS Santa Rosa Health Care, Methodist Healthcare, Bexar County Medical Society, Southwest General Hospital, Community First Health Plans, Methodist Healthcare Ministries, San Antonio Metropolitan Health District, and Baptist Health System (2004). There are no military representatives involved as institutional members in The Collaborative at this time, although there are military representatives actively involved on committees (J. Miller, Executive Director for the Collaborative, personal communication on April 13, 2004). According to Joan Miller, Executive Director for the Collaborative, the minimal participation by military entities is not due to purposeful exclusion or unwillingness on the part of MTFs to participate, but to the Alliance's originating purpose (2004). The Alliance was originally formed to assist local entities with the Medicaid reporting requirements for state

benefits from which military hospitals are exempt (2004). She does, however, leave open the possibility for further inclusion of the military as the Collaborative begins to expand upon its originating purpose and delves into other health care related arenas (2004).

Military – Specific Medical Initiatives

Federal Consortium

The Federal Consortium encompasses planning strategies within and between the Department of Defense and Veterans Administration in the San Antonio region (Lieutenant Colonel A.A. Edward, personal communication on April 6, 2004). It explores sharing initiatives and recommends implementation to local MTF commanders and the Chief Executive Officer from the Veterans Administration (VA) (2004). If recommendations for sharing are approved, the Federal Sharing Working Group orchestrates the implementation process. There are seven active DoD / VA sharing agreements that have been coordinated and negotiated through the Federal Sharing Work Group (2004). Under existing agreements, Wilford Hall provides maternity care, lithotripsy, magnetic resonance imaging, and strabismus surgery to the VA (2004). The VA provides ethylene oxide sterilization and computed tomography scans for Wilford Hall patients over 325 lbs (2004). Joint blood banking operations entail the provision of blood products by Wilford Hall to the VA, funding 10 staff positions at Wilford Hall (2004).

Unique Services

The military operates several unique services within the San Antonio area that cannot be duplicated within the civilian community (Masterson & Edward, 2004). These services include comprehensive burn care and the operation of a long-range extra corporeal membrane oxygenation transport unit (2004). BAMC operates the only comprehensive trauma, burn, and surgical critical care service in the DoD, admitting over 300 patients annually (2004). Wilford

Hall is also home to the world's only long-range extra corporeal membrane oxygenation transportable unit. This unit has the capability to fly over 1,000 miles to deliver life-saving care to newborn infants in distress (2004).

Memorandums of Understanding / Agreement and Support Agreements

The 59th Medical Wing maintains approximately 80 Memorandums of Understanding and Support Agreements (Lieutenant Colonel A.A. Edward, personal communication on April 6, 2004). All are for provision of health care services and related functions (2004). In addition to the joint DoD / VA agreements described previously, health care services provided include standardized packages and specific services. Standardized packages include those for healthcare, equipment maintenance, bioenvironmental, supplies, financial management, and other general services (2004). Specific services include those for blood and tissue collection and inpatient psychiatric services. For example, an agreement with the South Texas Blood and Tissue Center ensures that civilian blood collections from the DoD blood donor pool do not compromise the military's medical readiness and healthcare mission (2004). In an agreement for inpatient psychiatric services, Wilford Hall agreed to treat active duty Army patients in return for funding from BAMC to support ten additional staff / five inpatient beds (2004).

Agreements have been made with geographically separated military units, sister services, National Guard, and Reserve units. Examples include the Army Veterinary Treatment Facility and DoD Military Working Dog Program; Naval orthotic cast technical students; Royal Air Forces at Lakenheath, United Kingdom; and Goodfellow Air Force Base. Agreements have also been made with a variety of civilian entities to include the American Red Cross; the Texas Organ Sharing Alliance; and the City of San Antonio, Emergency Management System (2004). Other agreements are for training and research / grants.

Lifestyles

2002 Community Health Assessment and Health Profiles

A comprehensive community health assessment and profile was conducted in 2002 for Bexar County and the San Antonio Metropolitan area with the support of the Bexar County Health Collaborative. It was a follow-up to a study conducted in 1998 and was intended to help guide current community prevention and health improvement efforts (Bexar County Community Health Collaborative, 2002). For purposes of the study, the county / city was divided into six sectors: northwest, north central, northeast, southeast, south, and west. A synopsis of some of the findings from the community assessment follows.

In terms of healthy lifestyles, there were distinct differences among sectors with the north central and northeast sectors ranked in the high quartile, the northwest sector ranked in the high to middle quartile, the southeast sector in the low-middle quartile, and the south and west in the lowest quartile. The study found that in general, San Antonians need to engage in more physical activity and lose weight, with exercise and food choices identified as key areas for improvement. Leisure-time physical activity was reported by 68% of respondents, a decline of 10% from 1998, and only 35% of survey respondents were at a healthy weight. Residents in the south sector ranked lowest for healthy weight. Only 20% of county residents surveyed reported eating the recommended two servings of fruit a day, while only 16% ate three vegetables a day. Residents in the west sector reported eating the fewest fruits and vegetables.

Because heart disease is the leading cause of death in Bexar County, exercise and healthy food choices are important means of prevention. High blood pressure was reported by 26% of Bexar County residents and 24% reported high cholesterol. The highest rates of stroke mortality were found in the southeastern and western sectors. The lifestyle choices made by residents are

also important for prevention of type 2 diabetes. The survey found that 11% of respondents have been diagnosed with diabetes. The lowest rate was in the northeast at 8% and the highest rate was in the southeast at 18%. The age-adjusted rate for diabetes-caused mortality was 45 per 10,000 in 2002, making diabetes the 4th leading cause of death in Bexar County. This is up from 1992 when diabetes was the 8th leading cause of death in the county and is higher than nation-wide rankings where diabetes is listed as 6th.

For both Bexar County and the entire state of Texas, cancer is the 2nd leading cause of death. The county's cancer mortality rate for 2000 was 192 per 100,000. An estimated 50% of cancers are considered preventable by healthy lifestyle factors such as eating a good diet, engaging in regular physical activity, and abstaining from smoking. As reported previously, San Antonians need improvement in factors such as diet and physical activity. There was slightly better news when smoking patterns were assessed. Bexar County reported slightly lower rates of smoking in 2002 than did Texas as a whole, 19% compared to 21%. The highest rate was recorded for south Bexar County residents with nearly 26% reporting that they were current smokers. In addition to lifestyle factors, early detection through the use of screening exams can significantly reduce cancer mortality. In 2002, 91% of women had a pap test and 77% of women over the age of 50 had mammography and / or breast exams.

Almost 8% of county residents reported chronic alcohol usage, higher than the statewide average of 5%. Chronic drinking, drinking sixty or more alcoholic drinks per month, was less of a problem in the north central (4.8%) and south sectors (6.2%). The northwest and southeast sectors led the county in chronic drinking with 8.7% and 8.8%, respectively. Binge drinking, defined as the consumption of more than 5 drinks during a single occasion, was reported by 17.7% of county residents, roughly comparable to the statewide average of 18.2%. The north

central and southeast sectors had the lowest rates for binge drinking with 13.3% and 12.2%, respectively, while the highest rates were found in northeast sector at 20%. The northwest (19.5%) and south (19.3%) and west (18.4%) all exceeded the county average for binge drinking.

The county was also evaluated for safety and injury prevention measures. Unintentional injuries account for 813 years of potential life lost per 100,000 with motor vehicle crashes accounting for almost half, at 451 years of potential life lost per 100,000. Mortality caused by motor vehicle accidents was lowest in the western (10.7%) and north central (11.2%) sectors and highest in the southern (16.3%) and northwestern (15%) sectors. Within the last 5 years, approximately 11% of county residents were victims of domestic violence. The highest percentage recorded, 16.3, was among residents in the south; and the lowest percentage recorded, 7.2, was among residents in the northeast. Rates of homes without smoke detectors were below 12% across the northern part of the county while homes in the west and southern areas without detectors were above 23%.

Bexar County is close to the *Healthy People 2010* goal of 90% of mothers receiving prenatal care in the first trimester (86%). The percentage of mothers receiving such care drops to only 61.5%, when only teenage mothers are considered. Teenage pregnancy remains a concern for the county. The average fertility rate for 12 to 17 year olds is 24.6%, with the west, southeast, and south side of the county reporting rates above 30%. The Bexar County infant mortality rate is 4.9% and meets the *Healthy People 2010* goal, while the neonatal mortality rate of 3.3% is just shy of the 2.9% goal.

Lifestyles of Military Personnel

Health-related behaviors of personnel are of interest to the armed forces as the military is tasked with maintaining a high-level of readiness. Poor personal health practices, such as the use

of tobacco, heavy alcohol consumption, or the use of illicit drugs, directly impact the military's ability to maintain readiness. Additionally, these behaviors set the stage for personnel to develop chronic diseases later in life. Many of these personnel will retire, and thus, will still be eligible beneficiaries of the military health system, providing a powerful incentive for the military to encourage its members to adopt healthy lifestyles. Since the mid-1980s, the Department of Defense has placed increasing emphasis on health promotion (Bray et al., 2004). This includes the assessment of health-related behaviors with progress compared most recently against *Healthy People* objectives.

According to the 2002 Department of Defense Survey of Health Related Behaviors Among Military Personnel, military personnel meet or exceed 7 of the 22 Healthy People 2000 objectives and are within 5 percentage points of meeting another 2 (2004). The objectives met included those for strenuous exercise, seat belt use, helmet use for motorcycle drivers and bicycle riders, pap smears received ever or received in the last three years, and abstaining from alcohol consumption during pregnancy (2004). Service members were just short of the weight objective for personnel over the age of 20 and the objective to abstain from cigarette smoking during pregnancy. The report notes that military regulations are probably instrumental in ensuring personnel meet standards for exercise, seat belts, helmet usage, and pap smears.

The areas identified as challenging for the military are objectives related to decreasing rates of smoking, smokeless tobacco, binge drinking, obesity, high blood pressure, cholesterol testing, and injury-related hospitalizations. For the first time since 1982, the general downward trend in cigarette smoking stopped, with a statistically significant increase in cigarette smoking measured at 33.8% in 2002, up from 29.9% in 2000. Although the 1/3 of military members that reported smoking cigarettes is comparable to rates found in the civilian population, the change in

trend is cause for concern and there is still ample opportunity for improvement (2004). Among the smokers surveyed, 49% had tried smoking cessation in the past, 35.6% intended to try smoking cessation within the next 30 days, and 26.4% intended to try within the next 6 months. 10% had quit smoking within the past year (2004).

Heavy alcohol use, defined as five or more drinks per typical drinking occasion at least once a week, increased from 15.4% in 1998 to 18.1% in 2002 (2004). Binge drinking, defined as having engaged in heavy drinking at least once during the last 30 days, was measured at 41.8% with most military personnel reporting such activity pursuant to a social occasion (2004). This rate is high when compared to 16.6% for civilians (2004). However, the rate is similar to binge drinking rates found among college populations especially when heavy drinking rates are adjusted for socio-demographic differences between military and civilian populations. Military personnel between the ages of 18 to 25 were significantly more likely, at 27.3%, to engage in heavy drinking than were civilians from the same age group, at 15.3% (2004). Rates for military and civilians between the ages of 26 to 55 were comparable (2004). Despite the increase in heavy drinking and the high binge drinking rates noted, there was a significant increase in military personnel reporting infrequent / light drinking or who abstained from alcohol consumption altogether, with 41.3% of personnel falling into this category in 2002 (2004).

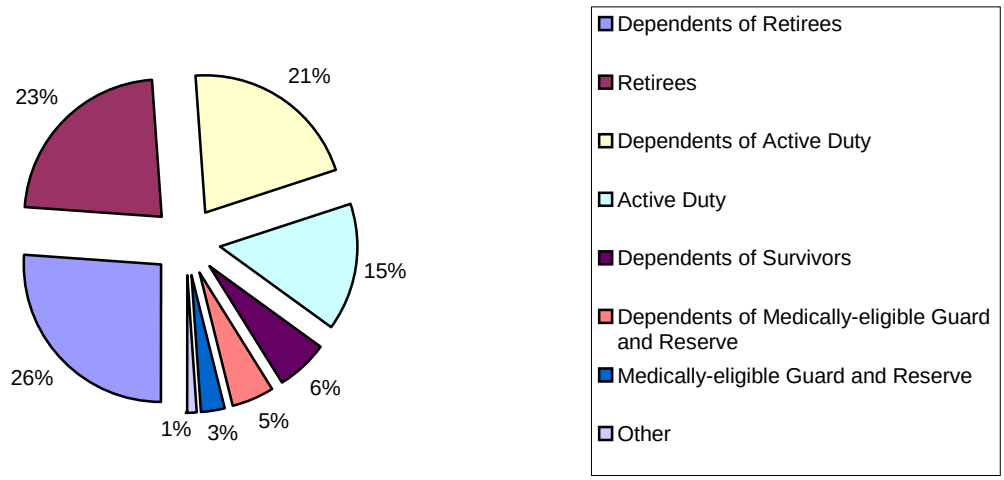
A variety of mental health issues were also addressed by the 2003 survey. Military personnel perceived work as more stressful than their personal lives (2004). For males, deployments and separation from family were the most frequently cited causes while females reported changes in personal life, separation from family, and deployment as the most common causes (2004). Higher stress levels were associated with below normal performance levels and twice the rate of illness, injury, or accidents in the workplace, involving 4 or more days of

absence from work (2004). Coping mechanisms identified in response to stress, feelings of depression, or anxiety include thinking of a plan to solve the problem, confiding in a friend or family member, and sports / exercise (2004). Nearly a quarter of personnel reported the use of alcohol as a coping mechanism (2004). Of the 18.7% who felt the need for mental health care in the 12 months before taking the survey, two-thirds actively sought and received care. The fact that more did not seek care may be attributed to the fact that nearly half of military personnel (48.8%) believe that mental health treatment may have an adverse effect on their career (2004). In terms of job satisfaction, 65.3% of military personnel reported that they were either "satisfied" or "very satisfied" with their present duty assignment, with Air Force personnel reporting the highest satisfaction, 72% (2004). The Army had the lowest reported job satisfaction rates at 60.9% (2004). Job satisfaction rates when analyzed by gender were similar (2004).

Eligible and Enrolled Beneficiaries in the San Antonio Area

As of March 1, 2004, there were over a million eligible beneficiaries within TRICARE Region 6 (TRICARE Eligible, 2004). As indicated by Figure 1, categories of beneficiaries include active duty, dependents of active duty, medically eligible Guard / Reserve, dependents of medically eligible Guard / Reserve, retirees, dependents of retirees, dependents of survivors, and other. Among those eligible for care, dependents of retirees (277,539), retirees (241,298), and active duty dependents (226,669) make up the largest segments (2004). Following the larger segments are active duty personnel that number approximately 154,654 (2004). The smallest segments are dependents of survivors (63,418), dependents of medically eligible Guard / Reserve (49,969), medically eligible Guard / Reserve (31,051), and other (10,178) (2004).

Figure 1. Categories of Eligible Beneficiaries in Region 6



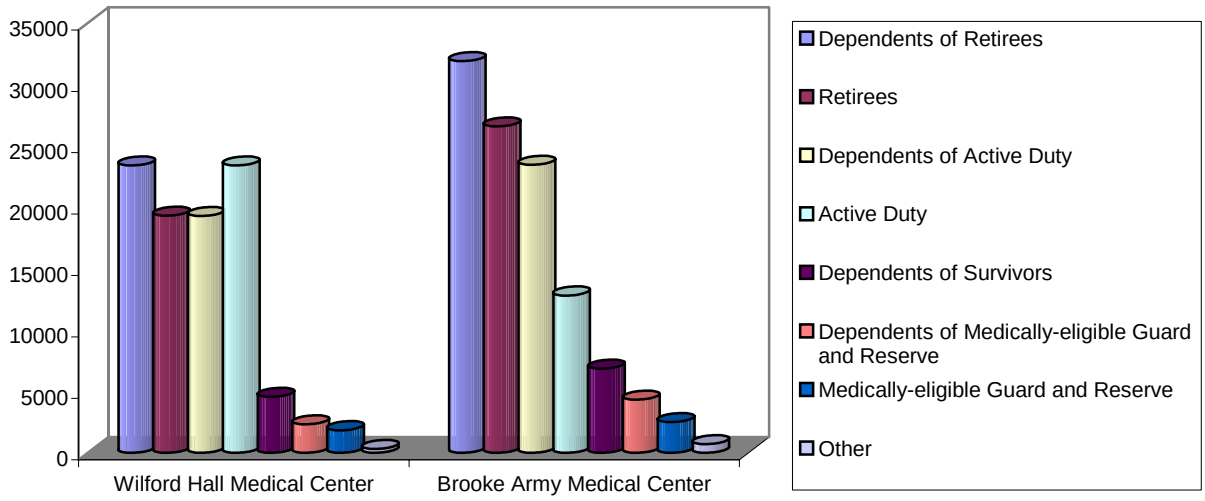
Source: Original Data taken from TRICARE Management Activity, 2004

Among those eligible for care, a total of 573,151 are TRICARE enrollees (TRICARE Enrollment, 2004). Enrollment categories include active duty Prime, non-active duty Prime, TRICARE Plus, and other. The largest enrollment category is composed of non-active duty Prime (69%) followed by active duty Prime (25%) (2004). TRICARE Plus enrollees account for 4%, with another 3% classified as other (2004).

Eligible beneficiaries residing within the catchment areas of Wilford Hall and BAMC were identified. These catchment areas, imaginary circles drawn in a 40-mile radius around a hospital that include areas with zip codes whose centers are within the catchments, are a measure of proximity that can be indicative of the most likely sources of care for beneficiaries residing within the area. Within San Antonio, Wilford Hall has a total of 94,538 eligible beneficiaries within its catchment area, while BAMC has a total of 109,228 eligible beneficiaries (TRICARE Eligible, 2004). Figure 2 (below) shows the total beneficiaries within each catchment area by beneficiary category. For Wilford Hall, the largest categories of eligible beneficiaries were

almost evenly split between dependents of active duty and retirees. BAMC's largest two categories were dependents of retirees and retirees.

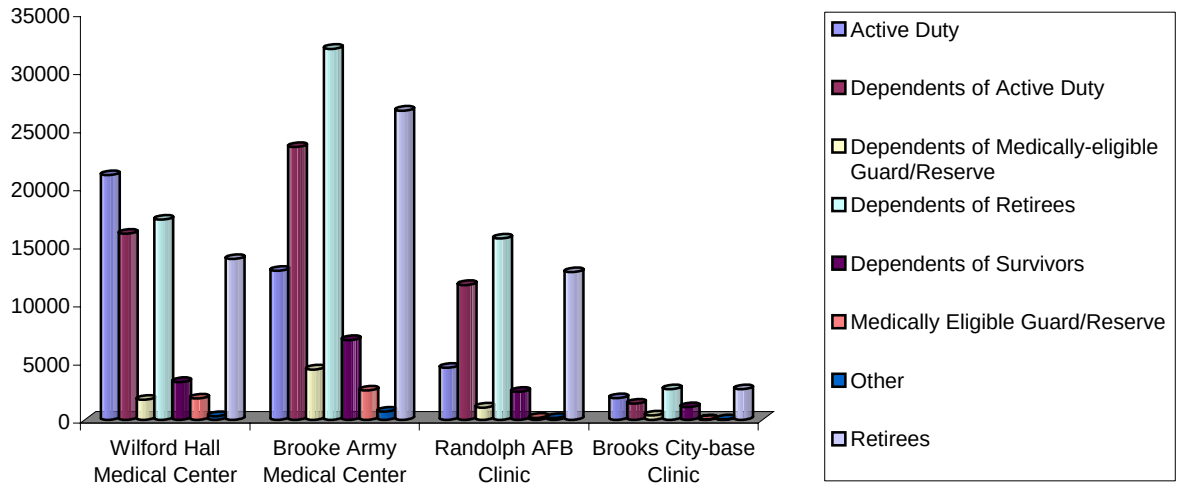
Figure 2. Eligible Beneficiaries by Catchment Area



Source: Original Data taken from TRICARE Management Activity, 2004

Identification of eligible beneficiaries by prism area was also conducted for the military treatment facilities in the San Antonio area. Used to determine the most likely sources of care, prism areas span a 20-mile radius, include clinics, and take the service-affiliation of residents into consideration. Prism areas in San Antonio and numbers of eligible beneficiaries are as follows (reference Figure 3): Wilford Hall (75,234 eligibles), BAMC (59,541), Randolph Clinic (48,157), and the Brooks City-Base Clinic (10,008).

Figure 3. Eligible Beneficiaries by Category and Prism Area / Facility



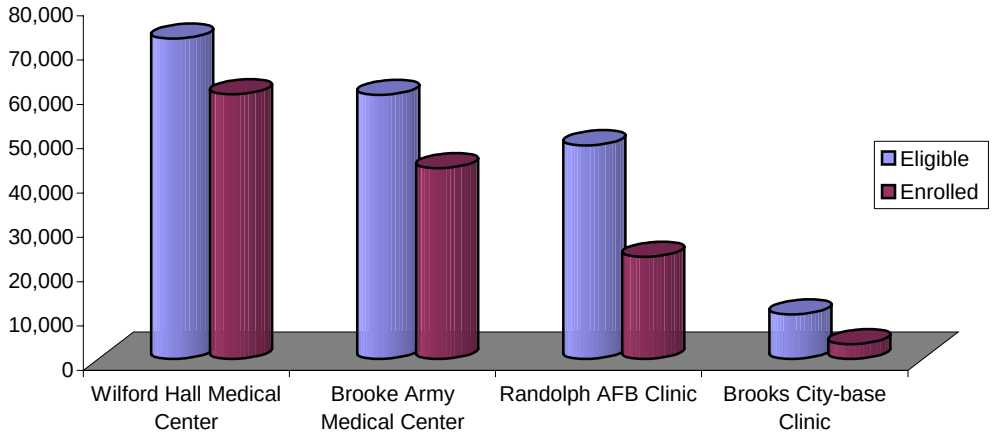
Source: Original Data taken from TRICARE Management Activity, 2004

As expected, there is some variation in population depending upon the method used to identify the beneficiary area (2004). Utilizing catchment areas, the eligible beneficiary population is measured at approximately 203,766, while using prism areas results in a population of 192,940. A map of eligible beneficiaries by catchment and prism area is available in Appendix A, Figure A2. Due to differences in time and date when data were captured, the eligible beneficiary population is 204,000. Knowledge of eligible beneficiaries is essential for demand forecasting. These numbers signify the quantity of beneficiaries for which the respective medical centers could be ultimately liable, should all beneficiaries decide to exercise their entitlements to care.

Wilford Hall and BAMC account for nearly 80% of all enrollments in the San Antonio area with 59,688 and 43,003, respectively (TRICARE Enrollment, 2004). The Randolph Clinic has 23,007 enrollees while the Brooks City-Base Clinic accounts for a modest 3,284 (2004). As depicted in Figure 4, the larger, more complex facilities tend to capture a larger percentage of

enrollees per eligible member than do the smaller clinical facilities. In rough terms, as calculated by enrollees divided by eligible beneficiaries, Wilford Hall and BAMC capture 78% and 72% of those eligible, respectively. Comparatively, the Randolph Clinic captures just fewer than one-half at 48% and the Brooks City-Base Clinic captures 33%.

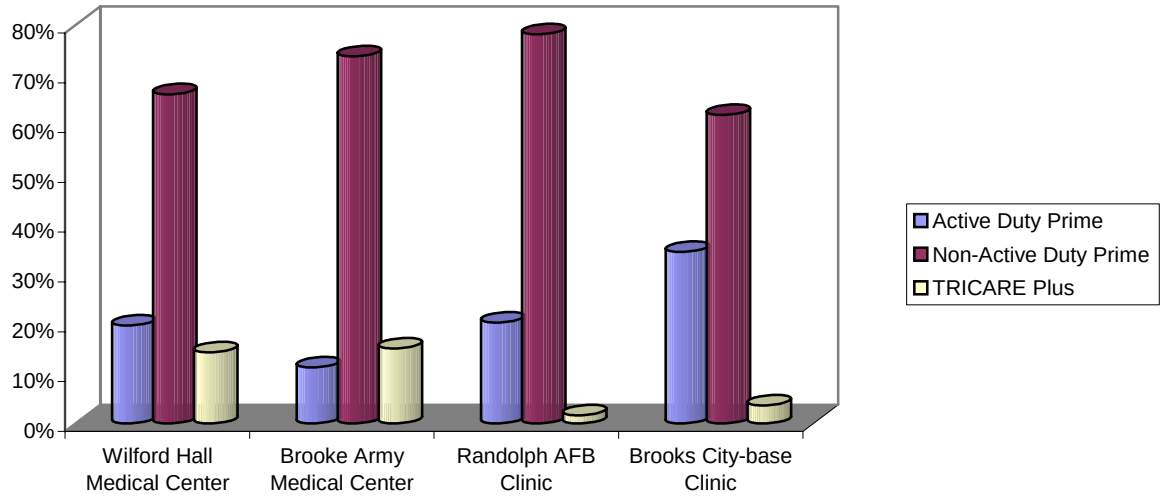
Figure 4. Eligible vs. Enrolled by Prism Area / Facility



Source: Original Data taken from TRICARE Management Activity, 2004

Non-active duty Prime composed the majority of enrollments at each location, varying from a low of 62% of enrollments at the Brooks City-Base Clinic to a high of 78% of enrollments for the Randolph Clinic (2004). The second highest category for all facilities was active duty Prime. This ranged from a high of 34% of enrollments for the Brooks City-Base Clinic to a low of 11% at BAMC (2004).

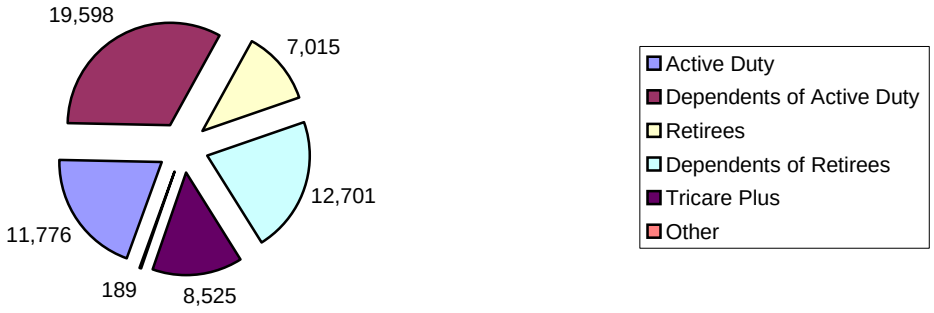
Figure 5. Enrollee Composition by Prism Area/ Facility



Source: Original Data taken from TRICARE Management Activity, 2004

Data extracted from the Composite Health Care System (CHCS) on March 2, 2004, reveal almost identical numbers of beneficiaries enrolled at Wilford Hall as those reported by the TRICARE Operations Center, 59,804 as opposed to 59,688 (Parkhurst, 2004). As seen in Figure 6, dependents of active duty account for approximately one-third of the enrollee base. Dependents of retirees and active duty beneficiaries are almost equivalent in numbers with 21% and 20% of enrollees, respectively. TRICARE Plus (14%), retirees enrolled in TRICARE Prime (12%), and other (negligible) make up the remaining portion of the enrollment base.

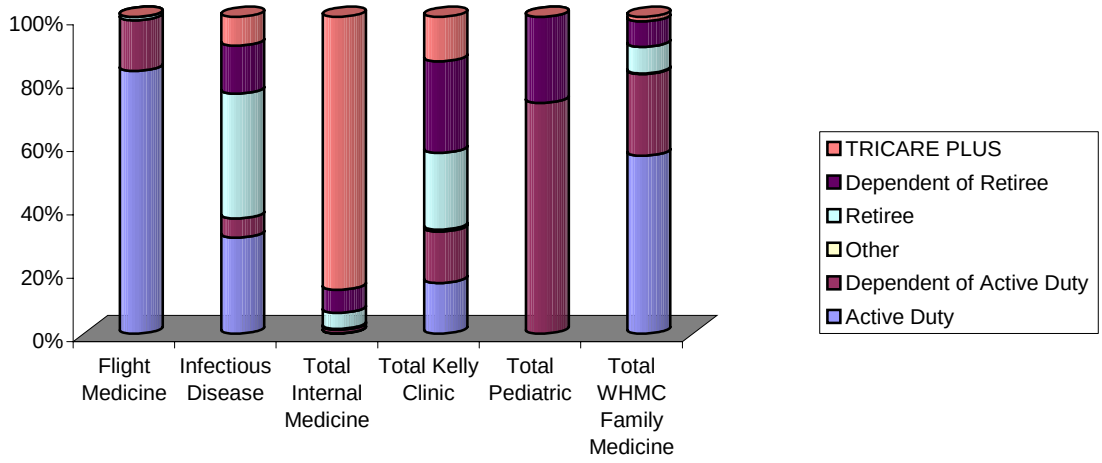
Figure 6. Numbers of Wilford Hall Beneficiaries by Category



Source: Original Data taken from TRICARE Management Activity, 2004

Enrollees at Wilford Hall are empanelled to one of the following clinical locations: flight medicine, infectious disease, internal medicine, Kelly Clinic, pediatrics, or family medicine. With some exceptions, enrollees have a choice of empanelment in family medicine or the Kelly Clinic. Enrollment in flight medicine is mandated for all active duty personnel on flying status. Family members of personnel on flying status may elect to enroll in the flight medicine clinic as well. Enrollment in either the infectious disease clinic or internal medicine is dependent upon the medical condition of the enrollee as well as the recommendation of a qualified health care provider. Last, pediatrics is limited to those aged 17 and below. The percentage of empanelled members by type for each clinic is shown in below in Figure 7.

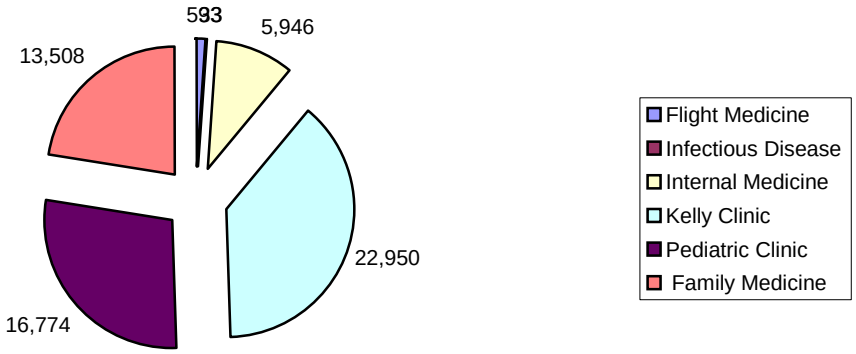
Figure 7. Empanelled Members by Clinic Type / Location



Source: Original Data taken from Edward & Parkhurst, 2004

As reflected in Figure 8, the majority of patients are empanelled at the Kelly Clinic, followed by pediatrics and family medicine (Edward & Parkhurst, 2004). The Kelly Clinic, a geographically-separated clinic operated as part of Wilford Hall, is likely preferred by beneficiaries due to ease of access, ample parking, and other convenience factors.

Figure 8. Numbers of Empanelled Members by Clinic



Source: Original Data taken from Edward & Parkhurst, 2004

Patient Demand for Outpatient Services

There were 855,684 appointments utilized by approximately 140,607 patients at Wilford Hall in FY 03 (Edward & Parkhurst, 2004). As shown in Table 1, below, TRICARE Prime enrollees utilized the largest number of appointments by group with 36%. This is followed by active duty non-enrolled (21%), TRICARE Plus (16%), active duty enrolled (12%), space available under the age of 65 (10%), and space available over the age of 65 (5%). For patients seen during FY 03, there was an average of six appointments per person across all patient categories. The lowest average rates of appointments used per person was for active duty non-enrolled and space available less than 65 years old with an average of only four appointments per patient. TRICARE Plus enrollees used the most appointments, with an average of 15 per person.

Table 1.

FY 03 Appointment Utilization by Beneficiary Category

	Patients	Appointments	Percentage of Patients Seen	Percentage of Appts Used	Average Appt per Patient
Active Duty Enrolled	12,718	102,014	9%	12%	8
Active Duty Non-enrolled	47,639	179,768	34%	21%	4
Space Available < 65	19,230	81,432	14%	10%	4
Space Available >65	6,186	42,969	4%	5%	7
TRICARE Prime	45,605	309,977	32%	36%	7
TRICARE Plus	9,229	139,524	7%	16%	15
TOTAL	140,607	855,684	100%	100%	6

Source: Original Data taken from Edward & Parkhurst, 2004

The top 20 diagnoses in FY 03 for the population as a whole as coded by the International Classification of Diseases (ICD), include a mix of acute, chronic, and preventative conditions. Acute respiratory infection, allergic rhinitis, and acute pharyngitis were among the acute conditions for which patients sought care (2004). Chronic illnesses coded include uncomplicated diabetes mellitus, essential hypertension, and hyperlipidemia (2004).

Gynecological examinations, dietary surveillance and counseling, health examination of defined subpopulations (e.g., armed forces, occupational health), and routine infant or child health were among the preventative and routine reasons for care (2004). The top 20 ICD codes can be found in Appendix B, Table 1.

Appointment Utilization by Enrollment Category

As reflected in Table 1 (above), TRICARE Prime patients consumed the largest portion of total appointments at 36%. There were 45,605 TRICARE Prime patients seen during the fiscal year who were responsible for 309,977 appointments utilized. Out of the patients seen, the appointments per person averaged seven. Patients in the 5 to 14 year and the 15 to 24 year categories had the lowest appointment utilization of Prime enrollees, averaging five appointments per person (2004). This is not unexpected considering the age and generally healthier status of these two age groups. The highest utilization was among the 45 to 54 year-olds with an average of eight visits per person and the 55 to 65 year-olds with an average of 11 visits per person (2004). The increasing appointment utilization most likely reflects the more intensive health care needs that occur as a function of the aging process.

Table 2.

TRICARE Prime Patients by Age Range Seen in FY 03

Age Range	Total Number of Patients	Number of Appointments	Percentage of Total Prime Patients Seen	Number Appointments per Patient
00-04	4,673	32,674	10%	7
05-14	7,743	37,792	17%	5
15-24	6,891	33,600	15%	5
25-34	5,201	30,876	11%	6
35-44	6,472	39,240	14%	6
45-54	7,113	56,308	16%	8
55-64	7,512	79,487	16%	11
Total/Average	45,605	309,977	100%	7

Source: Original Data taken from Edward & Parkhurst, 2004

An analysis of the top 25 appointment types for TRICARE Prime beneficiaries reveals that patients in this category primarily seek services in pediatrics (20% of appointments by type) and family medicine (16%) (2004). Emergency room (7%), gynecology (6%), and obstetrics (5%) make up the next three most frequent types of appointments (2004). Other types are well dispersed throughout the facility, with no other type of service exceeding 4% (2004). Appendix C, Table C1 provides a detailed listing of appointment types for TRICARE Prime enrollees.

Active duty, non-enrolled accounted for the second largest utilization, at 21% of all appointments. There were a total of 47,639 active duty, non-enrolled patients seen, generating 179,768 appointments. The overall average number of appointments per patient is among the lowest of all the patient categories with only four. Although the total number of active duty that are not enrolled seems high, this figure can at least partially be explained by the large number of basic trainees on Lackland Air Force Base. Approximately 45,000 new recruits process through basic military training each year (Air Force Basic Military Training, n.d.). These recruits are considered on temporary duty status and are not enrolled in TRICARE Prime until after graduation, following arrival at their first permanent duty station. However, discrepancies are apparent in the data collected for active duty, non-enrolled. For example, there were patients listed in age categories that would normally be excluded from active duty such as 0 to 4 and 5 to 14 or 75 to 84 and 85 to 120 (Edward & Parkhurst, 2004).

Almost half of all appointments made by active duty non-enrolled were in family medicine (48%) (2004). Emergency room (7%), psychiatry (6%), and psychology (6%) were the next three largest single sources of care (2004). Utilization patterns are consistent with those expected from basic trainees. Family medicine is a frequent access point for general physical exams or sick call / acute care and the emergency room receives basic trainees for after-hours

sick call or to evaluate injuries that might arise during physical training. Mental health evaluation to determine fitness for duty is a not uncommon occurrence. No other clinic received more than 4% of total appointments for this category (2004). A more complete listing of the top 25 appointment types for active duty non-enrolled is found in Appendix C, Table C2.

TRICARE Plus patients utilized 16% of all appointments with 9,229 patients accounting for a total of 139,524 appointments. The group, as a whole, averaged 15 appointments per patient with the appointment utilization roughly correlating with advancing age levels. Patients in the 65 to 74 year-old age category, comprising the majority of TRICARE Plus patients, averaged 14 appointments per patient (reference Table 3). For patients in the 75 to 84 and in the 85 to 120 year old age categories, appointment utilization per patient was 18 (2004).

Table 3.

TRICARE Plus Patients Seen in FY 03 by Age Range

Age Range	Total Number of Patients	Number of Appointments	Percentage of Total TRICARE Plus Patients Seen	Number Appointments per Patient
55-64	1	2	0%	2
65-74	6,412	88,715	69%	14
75-84	2,351	42,415	25%	18
85-120	465	8,392	5%	18
Total	9,229	139,524	100%	15

Source: Original Data taken from Edward & Parkhurst, 2004

Reflecting the elderly patient population enrolled in TRICARE Plus, the largest single sources for appointments were internal medicine (18%) and cardiology (16%) (2004). Family medicine and ophthalmology each accounted for 8% of appointments, followed by the emergency room with 5% (2004). There were no other single sources of care that accounted for more than 4% of the total by type of appointment (2004). A complete listing of the top 25 types of appointment for TRICARE Plus beneficiaries can be found in Appendix C, Table C3.

Active duty enrolled personnel utilized 12% of appointments with 12,718 personnel utilizing 102,014 appointments. Appointment utilization was slightly above the medical center average with eight appointments per patient seen. As seen in Table 4, this figure was consistent throughout each age category, with the exception of those in the 65 to 74 year old age range. For the two personnel that fell into this category, appointment utilization was only slightly higher with an average of 10.

Table 4.

Active Duty Patients Seen in FY 03 by Age Range

Age Range	Number of Patients	Number of Appointments	Percentage of Total Active Duty Patients Seen	Number Appointments per Patient
15-24	2,629	21,734	21%	8
25-34	4,572	35,697	36%	8
35-44	4,325	34,907	34%	8
45-54	1,088	8,863	9%	8
55-64	102	794	1%	8
65-74	2	19	0%	10
Total	12,718	102,014	100%	8

Source: Original Data taken from Edward & Parkhurst, 2004

Active duty personnel utilized family medicine more than any other appointment type, with 24% (2004). The next highest single source of care was physical therapy (7%) followed by ophthalmology (6%) (2004). Chiropractic, gynecology, emergency room, preventative medicine, and obstetrics were the next highest sources of care with 5% each (2004). There was no other single source of care accounting for more than a 3% share of appointments for active duty enrollees (2004). Appendix C, Table C4 contains the top 25 types of appointments for active duty personnel.

Space available beneficiaries under the age of 65 utilized 81,432 appointments with an average of only 4 appointments per person. Space available appointments are relatively evenly split across all age groupings, with no one category exceeding more than 18% of the total and no one category falling below 11% (see Table 5). The highest two age groupings were patients age 0 to 4 and 15 to 24, each accounting for 18% of the space available under age 65 appointments. As reflected in Table 5, the rate of appointment utilization remained consistent at four through all age categories until the 35 to 44 year old age bracket where patients averaged five appointments per person. The rate increased once more, rising to an average of six, for those aged 55 to 64.

Table 5.

Space Available Patients Under Age 65 Seen in FY 03 by Age Range

Age Range	Total Number of Patients	Number of Appointments	Percentage of Total Space Available Under Age 65 Patients Seen	Number Appointments per Patient
00-04	3,520	13,547	18%	4
05-14	2,914	10,377	15%	4
15-24	3,410	13,056	18%	4
25-34	2,993	12,949	16%	4
35-44	2,210	10,039	11%	5
45-54	2,151	9,746	11%	5
55-64	2,032	11,718	11%	6
Total	19,230	81,432	100%	4

Source: Original Data taken from Edward & Parkhurst, 2004

Pediatric and emergency room were the two most frequent appointment types for space available less than 65 years, with 21% and 12% respectively (2004). The next three most frequent appointment types included obstetrics (8%), gynecology (6%), and family medicine (5%) (2004). There were no other single sources of care that accounted for greater than 4% of appointment types utilized (2004). A listing of the top 25 appointment types for this patient category is in Appendix C, Table C5.

There were 42,969 appointments utilized by 6,186 different beneficiaries in the space available over the age of 65 category. The number of appointments per patient remained steady at 7 with no deviation. Table 6, below, reveals that more than half of this group fell in the 65 to 74 year old age bracket. Those between the ages of 85 to 120 accounted for the least amount of patients with only 10% of the total. However, the rates of appointment utilization by age for this category of patient are significantly lower are the rates for by age for other categories of beneficiaries. For example, patients in the 65 to 74 year old age bracket averaged only seven appointments per patient for space available compared to active duty (10) and TRICARE Plus (14) (2004). This difference in utilization can most likely be explained by the limited access afforded to space available patients.

Table 6.

Space Available Patients Over Age 65 Seen in FY 03 by Age Range

Age Range	Total Number of Patients	Number of Appointments	Percentage of Total Space Available Over Age 65 Patients Seen	Number Appointments per Patient
65-74	3,297	22,054	53%	7
75-84	2,259	16,738	37%	7
85-120	630	4,177	10%	7
Total	6,186	42,969	100%	7

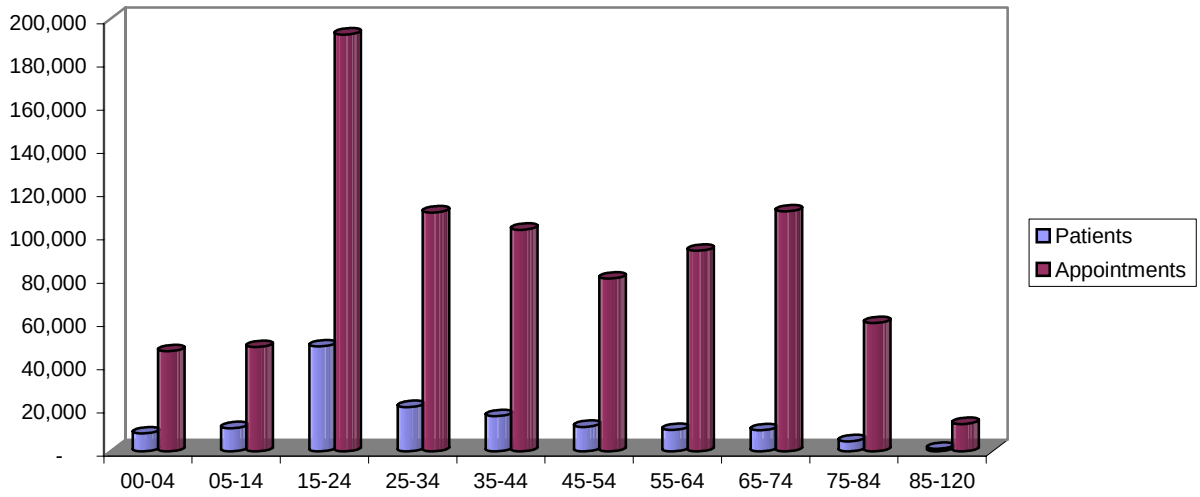
Source: Original Data taken from Edward & Parkhurst, 2004

The types of appointments used by space available personnel greater than 65 years of age reflected the health problems of more advanced age. Cardiology and emergency room were the top two appointment types accounting for 23% and 8% of all appointments utilized (2004). These were followed by ophthalmology (7%), internal medicine (6%), radiology (5%), and urology (5%) (2004). A listing of the top 25 appointment types for space available personnel greater than 65 years of age is found at Appendix C, Table C6.

Appointment Utilization By Age Range

An evaluation of appointment utilization by age categories regardless of enrollment status was also conducted. Patients between the ages of 15 to 24 years made up the majority (34%) of all persons seen by appointment (2004). The 25 to 34 year-old and 35 to 44 year-old categories were the second and third largest, accounting for 15% and 12%, respectively (2004). These age ranges are likely in the top three for utilization due to the large number of active duty personnel that are within these age groupings.

Figure 9. Appointment Utilization by Age Range



Source: Original Data taken from Edward & Parkhurst, 2004

Appointment utilization for ages 0 to 4 averages six visits per patient (reference Table 7). This is consistent with well-baby, preventive health care requirements expected at this stage. Per patient appointments remain in the single digits until the 65-74 year old range. However, those over the age of 65 use only 11% of the appointments.

Table 7.

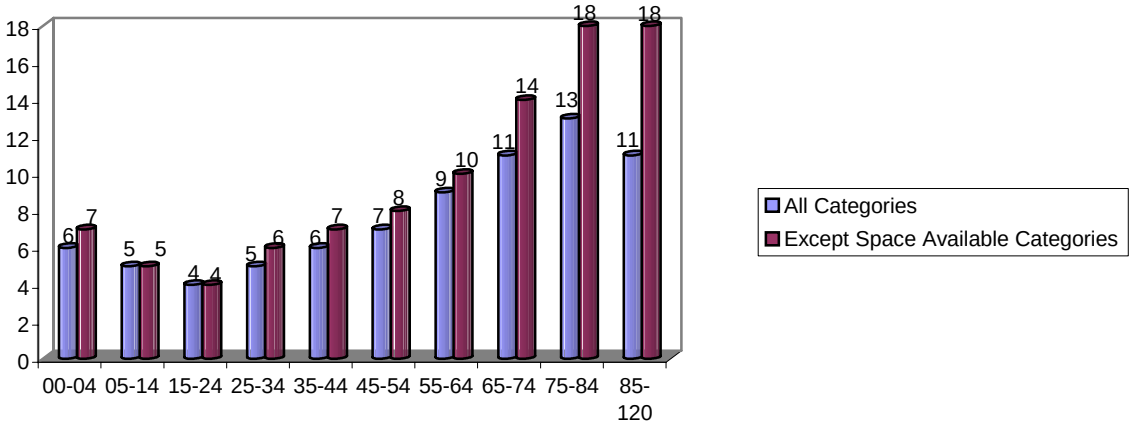
Consolidated Appointment Utilization for All Patient Categories FY03 by Age Range

Age Category	Patients	Appointments	percentage of Patients Seen	Average Appt per Patient
00-04	8,228	46,288	6%	6
05-14	10,669	48,190	8%	5
15-24	48,464	192,748	34%	4
25-34	20,438	110,452	15%	5
35-44	16,218	102,451	12%	6
45-54	11,290	79,896	8%	7
55-64	9,826	92,793	7%	9
65-74	9,732	110,936	7%	11
75-84	4,633	59,308	3%	13
85-120	1,109	12,622	1%	11
Total	140,607	855,684	100%	6

Source: Original Data taken from Edward & Parkhurst, 2004

Space available patients represent a unique challenge in demand management, as the services utilized are somewhat discretionary to the facility. Whether or not space available personnel are treated is governed by local policy. Theoretically, the decision to treat is based upon whether or not a facility has excess capacity. In practice, blanket policies barring access for space available personnel are not uncommon. Access by space available patients may skew data, as such access is limited and is not representative of what services patients seek when they are unconcerned about gaining access to the facility by virtue of enrollment. Although active duty non-enrolled are not formally in TRICARE, they do not have the same access concerns as patients in the space available category. Active duty are authorized access to care in any military treatment facility. As shown in Figure 10, utilization results are significantly different when space available patients are excluded, especially patients in the higher age categories.

Figure 10. Comparison of Appointment Utilization for All Patient Categories FY03 by Age Range



Source: Original Data taken from Edward & Parkhurst, 2004

Analysis of appointment types by age categories reveals that for both the 0 to 4 and 5 to 14 age ranges, the largest single sources of care are pediatrics, with emergency room following second (2004). Family medicine was the largest single source of care for the following age ranges: 15 to 24, 25 to 34, and 55 to 64 (2004). At age 65 to 74, cardiology became the most prevalent appointment type followed by internal medicine (2004). This pattern remained through the final two age ranges (75 to 84 and 85 to 120) (2004). The emergency room, recognized as a center of high costs, remained in the top five consistently, regardless of age group (2004). Graphical representation of the top 10 appointment types for each age range, and tables showing all appointment types for each age range, is available at Appendix D.

The top 20 ICD Codes by age range (see Appendix B, Tables B2 through B11) were studied to ascertain the most common reasons (acute, chronic, and preventative) for which patients sought care. For those aged 0 to 4, acute conditions included upper respiratory infection, otitis media, fever, conjunctivitis, and unspecified viral infections (2004). Among the

preventative reasons for seeking care were routine infant or child health exams, prophylactic vaccinations, and examination of ears and hearing (2004). Patients in the 5 to 14 range sought care as a result of acute conditions such as otitis media, fever, cough, and strep throat (2004). Chronic conditions included asthma and attention deficit with hyperactivity disorder and preventative care included routine infant or child health exams (2004).

Patients in the 15 to 24 age range sought care for acute problems such as acute respiratory infection, fever, and acute phayrngitis (2004). Reflecting the number of young active duty personnel and active high school or college students within this age range were treatments rendered for sprain and joint pain, likely a result of physical conditioning or other athletic activities. Additionally, many patients in this range were treated for adjustment disorder, brief depressive reactions, and screening for unspecified mental disorders (2004). This is not surprising considering the stress encountered by adolescents in their high school and early college years as well as the stress levels encountered by basic trainees, the vast majority of whom fall within this age range.

Conditions coded for those aged 25 to 34 included acute upper respiratory infection and allergic rhinitis (2004). Female infertility and childbirth labor checks were among the top 20 reasons for care (2004). Preventative / health maintenance reasons for care included dietary counseling, gynecological examinations, education regarding medication, and fitness for duty examination (2004). Lesions in the thoracic, sacrococcygeal, and cervical regions are a concern for this range (2004). Patients age 35 to 44 were treated for acute conditions that included allergic rhinitis and acute upper respiratory infection (2004). Chronic conditions observed for this age range included essential hypertension and lumbago (muscular rheumatism) (2004).

Similar to those in the 25 to 34 year range, lesions were among the top 20 reasons coded (2004). Dietary surveillance, education regarding medication, and health examination of defined populations were among the preventative, health maintenance services sought (2004).

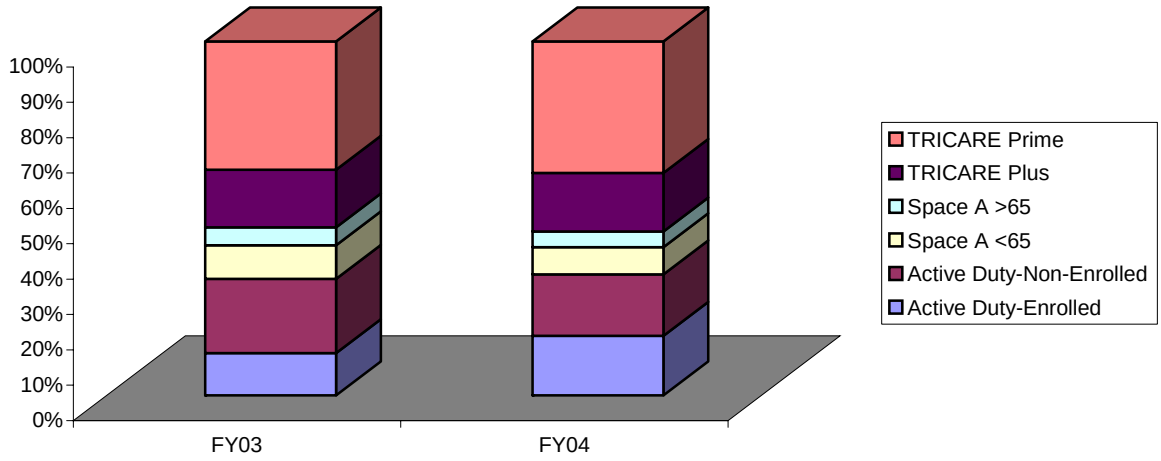
A shift in ICD Codes was observed for those aged 45 to 54, with a noticeable increase in chronic conditions. Chronic conditions coded include esophageal reflux, uncomplicated diabetes mellitus, essential hypertension, and hyperlipidemia (2004). Acute care services were similar to other ranges with allergic rhinitis and upper respiratory infections (2004). Preventative / health maintenance services include gynecology, dietary surveillance and counseling, and breast cancer screening (2004). Those aged 55 to 64 were similar; however, cardiac services begin to appear in the list for the top 20 conditions treated (2004). The remaining age ranges (65 to 74, 75 to 84, and 85 to 120) reveal a similar tilt toward chronic conditions such as diabetes, hypertension, and cardiac disorders (2004). Problems experienced by these age groups as a result of the natural aging process include osteoarthiritis, hearing loss, and senile nuclear cataracts (2004).

Outpatient Care Provided to Non-enrolled Beneficiaries

Although nearly 65% of FY 03 appointments were utilized by enrolled TRICARE beneficiaries, the remaining 35% of appointments utilized by non-enrolled beneficiaries cannot be trivialized, as it represents a significant outlay of resources on a population over which military medical facilities have little to no medical managerial control (2004). For this reason, efforts have been undertaken to enroll those eligible beneficiaries that utilize medical services on a regular or semi-regular basis, but have yet to enroll. A comparison of appointment utilization between FY 03 data and FY 04 data (October 2003 through January 2004), reveals an increase (2004). In FY 04, appointment utilization by enrollment category is as follows: TRICARE Prime (37%), active duty non-enrolled (17%), active duty enrolled (17%), TRICARE Plus (17%), space

available under 65 years old (8%), space available over 65 years old (4%) (2004). Thus, enrollees now make 71% of appointments as compared to almost 65% in FY 03 (see Figure 11) (2004).

Figure 11. Comparison of Appointment Utilization FY 03 and FY 04 (Oct 03 – Jan 04)

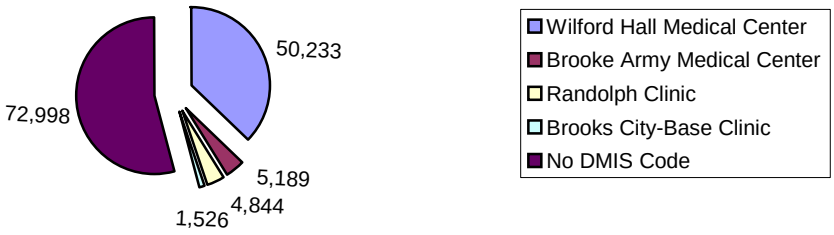


Source: Original Data taken from Edward & Parkhurst, 2004

Care Provided to Enrollees from Other Medical Treatment Facilities

Because Wilford Hall is a regional medical center with specialized capabilities, referrals from other facilities are common. Additionally, the mobility of the population due to vacations, temporary duty assignments, or other factors often results in TRICARE enrollees from other facilities requesting access to the center. Utilization of appointments must be analyzed by personnel of the referring facility because under T-NEX, medical facilities become fiscally liable for the care of their enrolled beneficiaries. At Wilford Hall, a little more than a third (37%) of patients seen were actually enrolled to the center (TRICARE Management Activity, 2004). Recapturing funds for the remaining 63% is, therefore, vital (2004) and will one of the goals of the revised financing resource strategy. Figure 12 shows the breakdown of enrollment locations for patients seen at Wilford Hall in FY 03.

Figure 12. Number of Patients Seen by DMIS Location in FY 03



Source: Original Data taken from Edward & Parkhurst, 2004

Due to liability for financial payments required by T-NEX, attention has focused on further identification and detail for those utilizing services at Wilford Hall under the "No DMIS Code" category. Although no detailed retrospective analysis has been done for FY 03 data regarding appointment utilization, FY 04 data has been scrutinized. In FY 04 (October 2003 through January 2004), there were 9,179 appointments at Wilford Hall for patients that are enrolled to other military treatment facilities (Edward & Parkhurst, 2004). These patients have been identified by specific DMIS codes. The top 25 DMIS code locations, as calculated by numbers of appointments, are listed in Appendix E. As shown in Table 8, most appointments utilized are a function of proximity. One-half of the no / other DMIS code appointments were from patients within TRICARE Region 6. The remaining 50% of appointments were widely dispersed globally. Individuals from no other single region utilized appointments accounting for a percentage greater than 7% of the total.

Table 8.

Summary of Appointment Utilization by TRICARE Region for FY 04 as of January 04

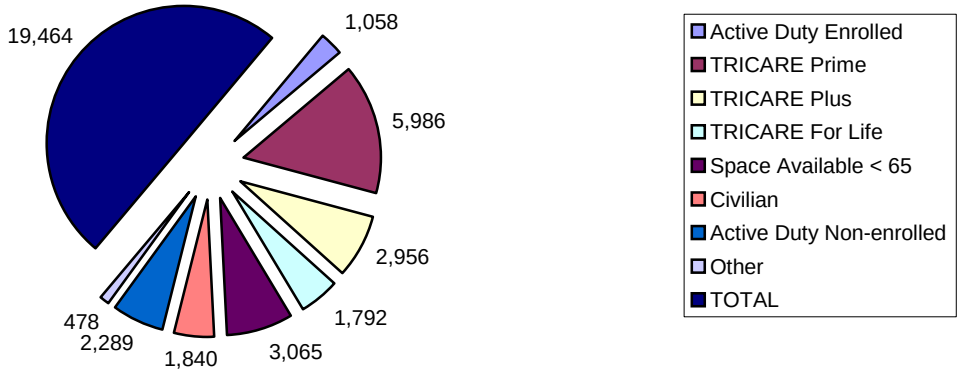
Region	Number of Appointments	Percentage of Total
1	609	7%
2	270	3%
3	424	5%
4	684	7%
5	172	2%
6	4,627	50%
7	589	6%
8	564	6%
9	113	1%
10	210	2%
11	89	1%
12	153	2%
13	277	3%
14	372	4%
15	26	0%
Total	9,179	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Inpatient Care

During FY 03, there were a total of 19,464 users of inpatient services (Masterson & Edward, 2004). As shown in Figure 13, TRICARE Prime patients comprised the largest user group with 31% of all patients. This was followed by space available, less than 65 years (16%); TRICARE for Life (15%); and active duty non-enrolled with 12%. The smallest two categories were active duty enrolled (5%) and other (2%). The typical inpatient seen at Wilford Hall had 1.3 dispositions, was admitted for 5.74 days and incurred charges of $1,735.00 (2004). Average relative weighted product, or resource consumption relative to other patients, averaged 1.66 per patient across all categories (Escobar, Ojeda, & Coventry, 1996).

Figure 13. FY 03 Inpatients by Patient Category



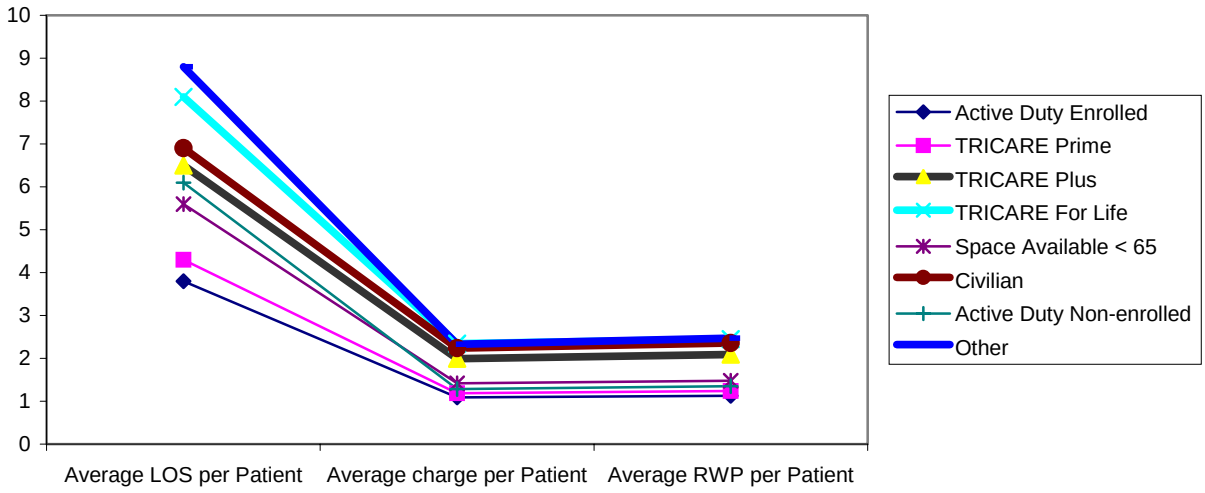
Source: Original Data taken from Masterson & Edward, 2004

Average length of stay per user in each category ranged from a low of 3.8 days to a high of 8.8 days. The patient categories with the highest length of stay averages included other (8.8 days) and TRICARE for Life (8.1 days). Comparatively moderate average lengths of stay were noted for civilian patients (6.9 days), TRICARE Plus (6.5 days), and active duty non-enrolled (6.1 days). The patient categories with the shortest length of stay were active duty enrolled (3.8 days), TRICARE Prime (4.3 days), and space available less than 65 years.

Relative weighted products (RWPs) ranged from a high of 2.47 for patients classified as other to a low of 1.13 for active duty enrolled. As expected, relative weighted products and higher charges per admission mirror average lengths of stay with those categories having the longest length of stays also experiencing the highest relative weighted products and corresponding charges per patient. As shown below in Figure 14, the heaviest users per patient of inpatient services in terms of length of stay, average charges, and average relative weighted products are patients classified as other, TRICARE for Life, civilians, and TRICARE Plus

patients. These four patient categories comprised a little over a third of the inpatients seen during the fiscal year. Enrolled, active duty and TRICARE Prime were consistently within the low range in terms of inpatient services used per patient.

Figure 14. Length of Stay, Charges, and Average RWP per Patient by Category



Source: Original Data taken from Masterson & Edward, 2004

Civilians and Other Non-Beneficiaries

By agreement, Wilford Hall accepts Code III emergency patients transported via ambulance or helicopter. Medical personnel have observed that the Code III classification is liberally applied resulting in frequent transport of patients into area trauma centers. This results in a number of civilian patients receiving care on a fairly routine basis at Wilford Hall. Under normal circumstances, civilian patients are stabilized and transferred to the county facility, University Hospital, for further treatment. However, there are exceptions to this process. University Hospital has denied transfers due to capacity constraints, prolonging the stay of civilian patients at Wilford Hall until space becomes available. In special cases, Wilford Hall opts to keep civilian patients in house under a special Secretary of Defense authorization; this occurs when such patients constitute a unique opportunity to provide training opportunities, e.g.,

graduate medical education for physicians. Patients under this special status are entitled to in-patient services and a specified, but limited, number of follow-up appointments subsequent to their release.

As discussed previously, there were a total of 1,840 civilian inpatients in FY 03 (Masterson & Edward, 2004). Civilian patients stayed an average of 6.9 bed-days with an average relative weighted product of 2.36 (2004). The treatment of civilians entails a significant outlay of resources. The average charge per disposition was approximately $17,774, for a combined total of over $18 million (Edward & Parkhurst, 2004). Of the more than $18 million spent for civilian trauma care, only slightly more than $6 million has been recouped (2004). Collections are difficult due to the large number of uninsured within the pool of civilian patients treated. Thus far, the MHS has had to absorb much of the cost of civilian trauma care in San Antonio. It is hoped that more funds will be recouped in future due to passage of the new state law discussed previously.

Lackland Air Force Base is home to the Defense Language Institute English Language Center, a support agency of the United States Department of Defense (Defense Language Institute, n.d.). The school teaches English to international students, both civilian and military. Students attending the school come from countries such as the Czech Republic, Egypt, Hungary, Japan, Taiwan, Thailand, and the Ukraine (Defense Language Institute, n.d.). The Inter-American Air Forces Academy is also located on the base. The Academy provides professional, technical, and managerial training to military and government agents from Latin America and the Caribbean (Inter-American Air Forces Academy, 2004). In 2003, Wilford Hall provided medical

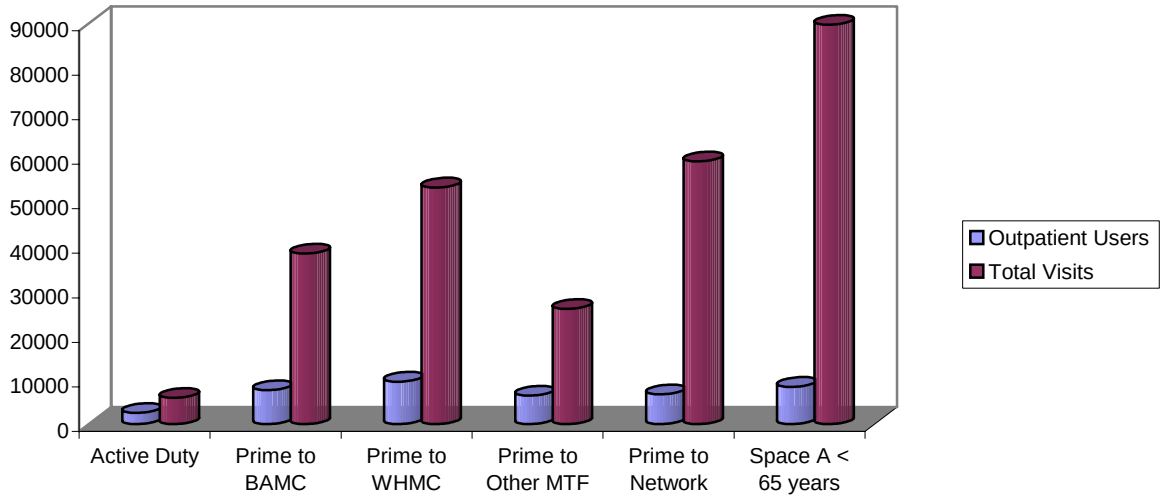
services to 1,186 NATO personnel and 1,723 personnel from non-NATO countries (Edward & Parkhurst, 2004). These students likely account for a portion of the 478 personnel admitted as inpatients to the Wilford Hall, appearing as other (Masterson & Edward, 2004).

Purchased Care from the Civilian Network

Purchased Outpatient Care

Total outpatient, network expenses in FY 03 for patients under the age of 65 were approximately $36 million (Edward & Parkhurst, 2004). Primary care services received in the network included internal medicine, family practice, and pediatrics (2004). Specialty care services included ophthalmology; gastroenterology; orthopedics; cardiology; ears, nose and throat; endocrinology, and neurology (2004). There were a total of 41,173 different users that sought outpatient care in the civilian care network (Masterson & Edward, 2004). The largest beneficiary group in terms of the percentage of patients utilizing services were Prime patients from Wilford Hall (23%) followed by space available patients under 65 years (20%), and Prime patients enrolled to BAMC (19%) (see Figure 15). In terms of total visits, space available patients utilized the most visits (33% of the total visits), followed by Prime patients enrolled to the network (22%) and Prime patients assigned to Wilford Hall (20%). Prime patients enrolled to network and Prime patients enrolled to Wilford Hall incurred the largest percentage of expenditures paid for civilian care with 23% and 26% of total expenses, respectively.

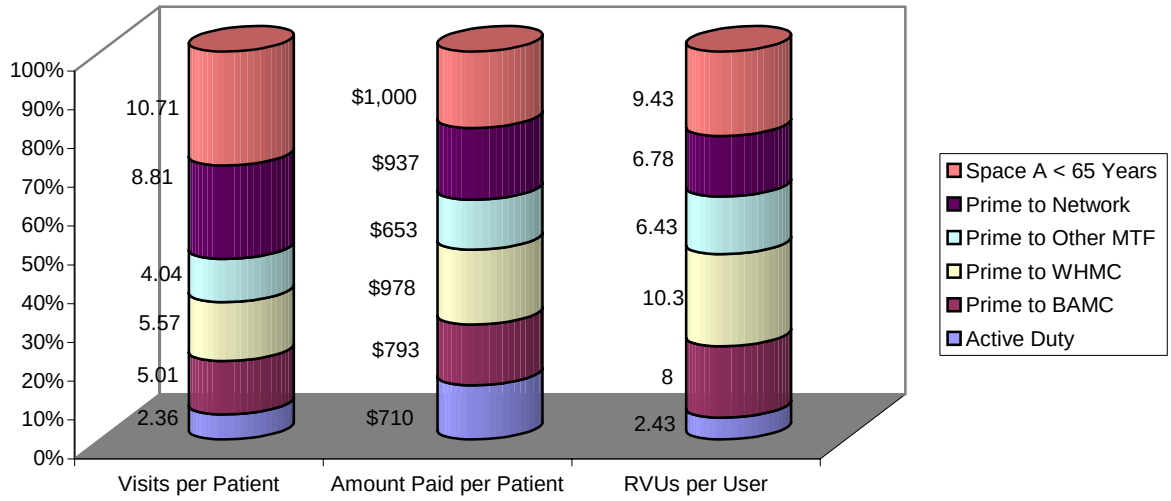
Figure 15. Outpatient Network Users and Total Visits by Patient Category



Source: Original Data taken from Masterson & Edward, 2004

The typical patient seeking outpatient services in the civilian care network had an average of 6.6 visits and incurred expenses of $875. Space available patients had the highest number of visits per patient with 10.71 followed by Prime patients enrolled to the network with 8.81 visits per patient. Active duty patients and Prime patients assigned to other MTFs had the lowest with 2.36 and 4.04 visits per patient, respectively. The average relative value unit per patient was 8.04. These varied from lows of 2.43 and 6.43 for active duty personnel and Prime enrolled to other MTFs to highs of 10.30 and 9.43 for Prime patients enrolled to Wilford Hall and space available patients of less than 65 years, respectively. Figure 16 provides a synopsis of visits, amounts paid, and relative value units.

Figure 16. Visits, Amount Paid, and Relative Value Units per Patient by Category



Source: Original Data taken from Masterson & Edward, 2004

Purchased Care for Inpatient Services

A total of $14.1 million was spent to purchase inpatient services in the civilian care network during FY 03 (Masterson & Edward, 2004). These services included admissions related to mental health (24% of total expenses), circulatory (17%), respiratory (10%), musculoskeletal disorders (9%), neurological (8%), and other (32%). Vaginal delivery and normal newborn care were among the top five diagnosis related groups in the "other" category. These expenses warrant careful consideration in the coming fiscal years. As of December of 2003, all TRICARE patients had the option of receiving obstetrical care in the civilian network without seeking a non-availability statement. Therefore, it is possible that costs for such cases will increase exponentially in the near future. However, the obstetrical wing at Wilford Hall has undergone extensive modifications in the last few years in an attempt to make it more attractive to patients. Data gathered over FY 04 will tell whether the new TRICARE policy has had a significant impact on in-house obstetrical operations and network utilization.

Technical Efficiency and Data Envelopment Analysis

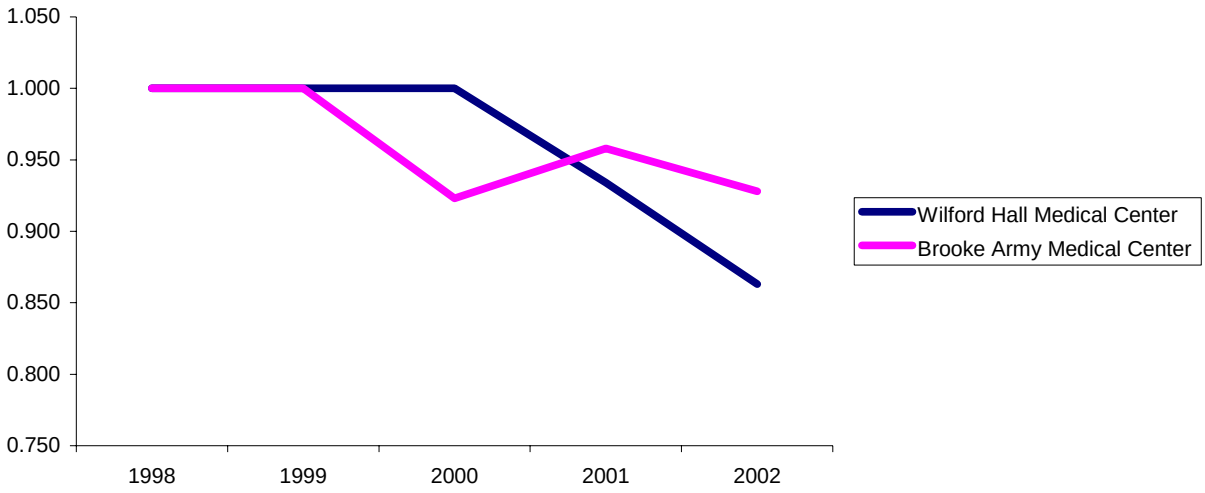
Coppola (2003) conducted a study on the optimization of technical efficiency and performance of 390 military treatment facilities from October 1, 1998 through September 31, 2002. Data envelopment analysis was used to measure relative efficiency for 78 of these facilities that had both inpatient and surgical capabilities. Input variables used in the analysis were operating costs, total number of beds, total number of full-time employees (includes part time employees that are matched into full time equivalents), and services offered (2003). Output variables included surgical, ambulatory, and emergency visits; case mix adjusted discharges; and live births (2003). The average efficiency score for the facilities studied was 89%; however, Coppola found that only 31% of MTFs studied were efficient (2003).

An analysis of weighted measures (coefficients of variables in standardized form subject to MTF constraints) suggested that MTFs placed the most emphasis on costs, regardless of service affiliation (2003). Differences in service affiliation were apparent when the variable of least importance was assessed (2003). Both the Army and Navy placed the least amount of importance on the number of beds, while the Air Force placed the least amount of importance on full time equivalents (2003).

As shown in Figure 15 (below), results of the data envelopment analysis for Wilford Hall clearly shows a declining trend in efficiency with scores at a high of 1.000 for the years 1998 through 2000. In 2001, the efficiency rating falls to .934 and in 2002, it drops even further to .863. Likewise, BAMC exhibits a downward trend from a high in 1998 and 1999 of 1.000 to a low of .923 in 2000. BAMC did have a brief rise in 2001 to .958, but efficiency levels slipped slightly again in 2002, to .928. Despite the downward trend in scores, both facilities

remain within the range considered as healthy, with healthy being determined by efficiency ratings above .85 (Coppola & Perry, 2004). Facilities are considered struggling if scores are between .70 and .84, and morbid below .69 (2004).

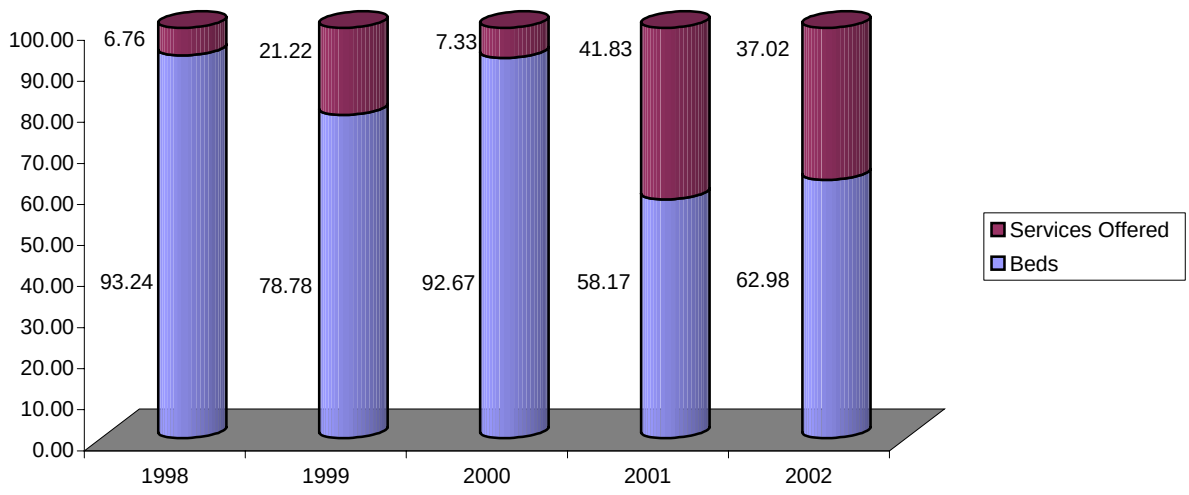
Figure 17. DEA Efficiency Scores for Wilford Hall and Brooke Army Medical Centers, 1998-2002



Source: Original Data taken from Coppola, 2003

An analysis of weighted measures, specific to Wilford Hall, involves analyzing the weights of input-variables to determine their relative importance in determining efficiency, when all other factors are held constant (Coppola, 2003). For all 5 years, costs and full time equivalents remained at 0.00. Thus, these variables had little to no contribution as to whether or not the medical center was operating at an efficient level. As seen in Figure 16, the remaining variables, beds and services offered, are the prime determinants of efficiency levels in the data envelopment efficiency optimization model. The model suggests that in order for performance enhancement to occur, efforts must focus on increasing efficiencies in relation to bed capacity and services offered.

Figure 18. Analysis of Weighted Measures for Wilford Hall*

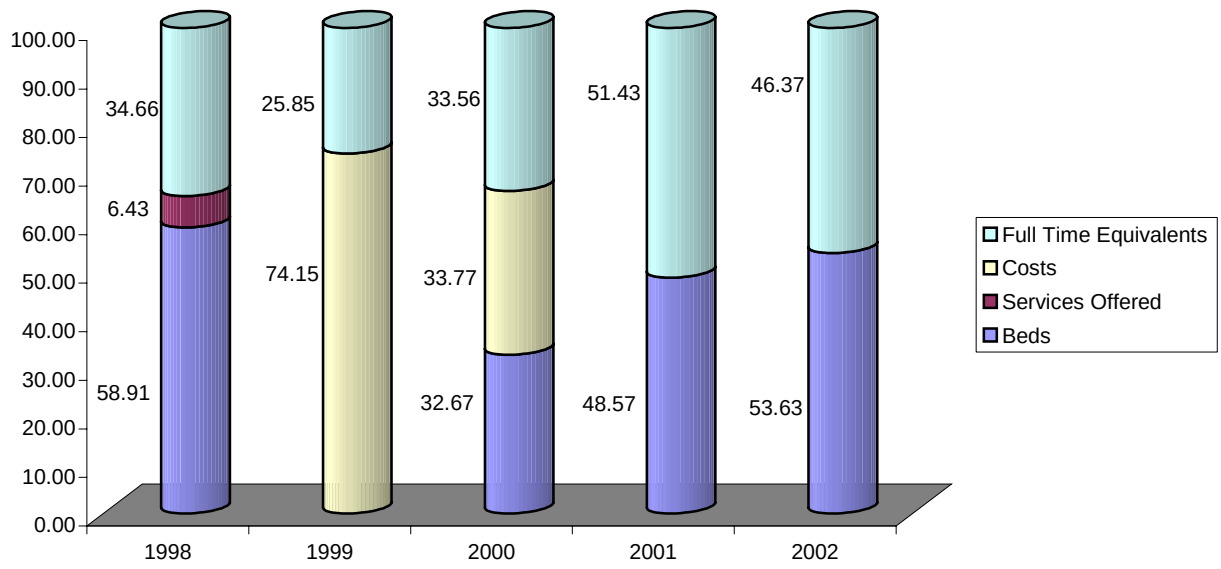


Source: Original Data taken from Coppola, 2004

*Note- Costs and Full Time Equivalents were 0.00 from1998 through 2002

In contrast, BAMC's analysis of weighted measures reveals a shift in importance over time on variables affecting efficiency levels (see Figure 17). For all years, full time equivalents are important determinants, ranging from a low of 25.85% to a high of 51.43%. Costs played a decisive role in 1999 with a weighting of 74.15%, falling to 33.77% in 2000. In 2001 and 2002, beds and full time equivalents remained the primary determinants for efficiency.

Figure 19. Analysis of Weighted Measures for BAMC



Source: Original Data taken from Coppola, 2004

Although both facilities are operating within the efficiency parameter labeled as healthy, the overall declining trend over the last years could be a matter for concern. Results of the study seem to indicate that both Wilford Hall and BAMC need to pay particular attention to bed capacity. Additionally, Wilford Hall must focus on services offered and BAMC must concentrate on full time equivalents. Because the study concluded in 2002, a new study should be conducted for 2003 to ascertain whether or not the determinants for efficiency have shifted in importance. Once concluded, medical operations can be enhanced by focusing efforts on the most important root causes of inefficiency, as revealed by the analysis of weighted measures.

CONCLUSIONS AND RECOMMENDATIONS

There is great interdependence existing in healthcare in the United States. It is not uncommon to encounter emergency rooms on “divert” status. Neither is it uncommon to find that the only trauma surgeon on staff at a local university hospital is a military doctor working, at the request of the university president, to assist the city in caring for trauma cases. Such is the case in San Antonio where the emergency management system, trauma care, and medical training are symbiotic. The San Antonio health care market has reached the mature market structure of a fifth generation integration (Lieutenant Colonel A.A. Edward, personal communication on April 6, 2004). Arguably, it can be considered to be one of the most progressive and collaborative healthcare markets in the country with its unique blend of DoD, university, for-profit, and not-for-profit institutions that operate synergistically to provide medical support for a diverse local and regional population (Colonel T.W. Rogers, personal communication on June 15, 2004). As a fifth generation system, its core strategy should involve operating as a collaborative innovative system (2004). Therefore, it would seem remiss for local MTFs to develop a multi-market management approach to health care to the exclusion of other key players in the market.

The mutual interdependence within the Bexar County / San Antonio medical community necessitates a collaborative relationship to help maximize both health care operations and delivery. In the past, organizations have formed on the basis of very specific mutual needs, resulting in a series of narrowly focused groups. What is needed is a group that exists for the sole purpose of facilitating collaboration, providing the flexibility to address many current issues and to develop strategies as necessary. An expanded model of the Bexar County Community Health Collaborative is proposed to help implement this strategy that will include MTFs within the local area as institutional members and active participants. This expanded model will enable the San

Antonio medical community to continue a committed membership in the existing medical consortium. Existing relationships will be strengthened by a formalized acknowledgment of interdependency that will allow the health care system to maximize performance. To make this possible, a new model framework for the Community Health Collaborative and its governance is proposed in this paper. For convenience, this expanded model will be called the Collaborative Plus.

Very few organizations know how to link their goal setting, strategy formulation, and performance evaluation processes in a consistent and cohesive way that corresponds to the direction in which the organization is heading (Leger, Schnieden, & Walsworth-Bell, 1992). The Collaborative Plus can be used to establish a collaboratively driven approach to market management that will ensure this linkage between goals, strategy, and performance. The Alliance, a partner organization to the Community Health Collaborative, provides an excellent roadmap for the Collaborative Plus. The Alliance has a clearly defined purpose and vision. Data have been gathered through the use of formalized reports and have formed the basis for the identification of a set of community issues. In turn, these issues have been referred to subcommittees for the development of strategic plans that will be used to resolve them. Although implementation of the strategic plans has not yet materialized, the Alliance clearly has great strengths from which much can be learned.

Integration and Collaboration

The Collaborative Plus will replace the former San Antonio Health Care Coordinating Council, as well as groups, such as the Trauma Institute of San Antonio, that deal with specified operational issues. It will make area-wide decisions based on appropriate guidance and strategy regarding the delivery of healthcare operations, assuring all appropriate headquarters that cost

effective strategies are deployed in executing healthcare operations in San Antonio. The San Antonio market, under the Collaborative Plus, should have a single strategic plan that establishes mission, vision, and values for a regional approach to the market. The recognized mission should be to provide our population with good health and peace of mind, secure in the knowledge that they have access to the highest quality health care possible. The value statement should include an "unwavering commitment to our multiple healthcare missions" (Lieutenant Colonel A.A. Edward, personal communication on April 6, 2004). From these statements, six key processes emerge: homeland defense, healthcare operations in peacetime, education and training, clinical services, and interim sharing / joint ventures (2004). All Collaborative Plus initiatives under development must support one of these key processes.

The facilities in the 22-county region must support the strategic planning process and incorporate it into their own planning structure. A strategic measurement system such as the balanced scorecard[4] should be developed for each facility with appropriate goals and objectives derived from the strategic plan and associated key processes. The strategic plan along with the complementary balanced scorecards should form the backdrop against which all proposals affecting local health care delivery and health initiatives are measured, evaluated, and constantly reassessed to ensure their individual support of the overall area strategy under the guidance of the Collaborative Plus.

The governing board for this expanded organization will need to be composed of the commanders and administrators of Wilford Hall, BAMC, Brooks City-Base Clinic, and the Randolph Clinic as well as the Air Education and Training Command Surgeon and the chief executive officers of all the civilian healthcare systems in the city. Additionally, the Director,

[4] The balanced scorecard was developed by Robert S. Kaplan of the Harvard Business School and David P. Norton, president of Balanced Scorecard Collaborative, Inc. and is widely used tool to assist in strategy implementation (Ginter, Swayne, & Duncan, 2002).

South Texas Veterans Health Care System (Audie Murphy Division, Kerville Division, and the Patient Clinics Division); the Chief Executive Officer of the University Health Center; and Dean of University of San Antonio Health Science Center should be part of the governing body. To assist the governing body in developing cohesive strategy and implementing its collective mission, advisors will be added as required. The Collaborative Plus council should appoint a senior healthcare executive from among the board membership to serve as the coordinator of board activities on an annual basis. Several established committees continue to be necessary (2004):

- Clinical Services Working Group: This group is tasked to work medical service issues such as trauma care, external / internal partnering agreements, and other services as the Collaborative deems necessary.
- Facilities Working Group: The facilities working group will identify any major construction projects or facility modifications as needed to accommodate joint / collaborative issues.
- Finance and Information Management Working Group: This group will facilitate the design of new financial strategies for medical payments. It will assist local health care entities in the formation of joint agreements from a financial or resource perspective. The management of information and integration is another task for which this group will be chartered.
- Graduate Medical Education: The San Antonio Council of Graduate Medical Education will continue to fulfill its existing charter but will be tasked to report its agendas to the Collaborative Plus. This will provide a more global look at the impact of graduate medical education in the San Antonio market.

- Medical Readiness Posturing Working Group: This group will continue to monitor the implication of deployments on facilities in the area and coordinate with other working groups.

Guiding Principles for the Military Health System

Certain guiding principles should be held constant by MTFs under the Collaborative Plus to ensure that the MHS' mission continues to be met and that the six key processes remain possible. These principles include maintaining a readiness focus, ensuring the optimization of resources, providing superior training, and improving access to care for beneficiaries (2004). Maintaining a readiness focus means ensuring that medical assets and services are available to meet the unique medical readiness capabilities, as required for each military service. The optimization of resources means that medical assets and services are utilized so as to ensure high levels of efficiency, effectiveness, quality outcomes, and access. Superior training involves the integration of graduate medical education programs across all three services. Required medical specialties must be accurately identified and resourced. Further, as training is sometimes conducted in combination with the VA and University Systems, they also must meet and exceed the San Antonio Council of Graduate Medical Education's Residency Review Committee (2004). Improved access is made possible when medical assets or services are conveniently accessible and is further enhanced by ensuring that resources are not wasted by unnecessary duplication across service lines.

Implementation of the Expanded Collaborative

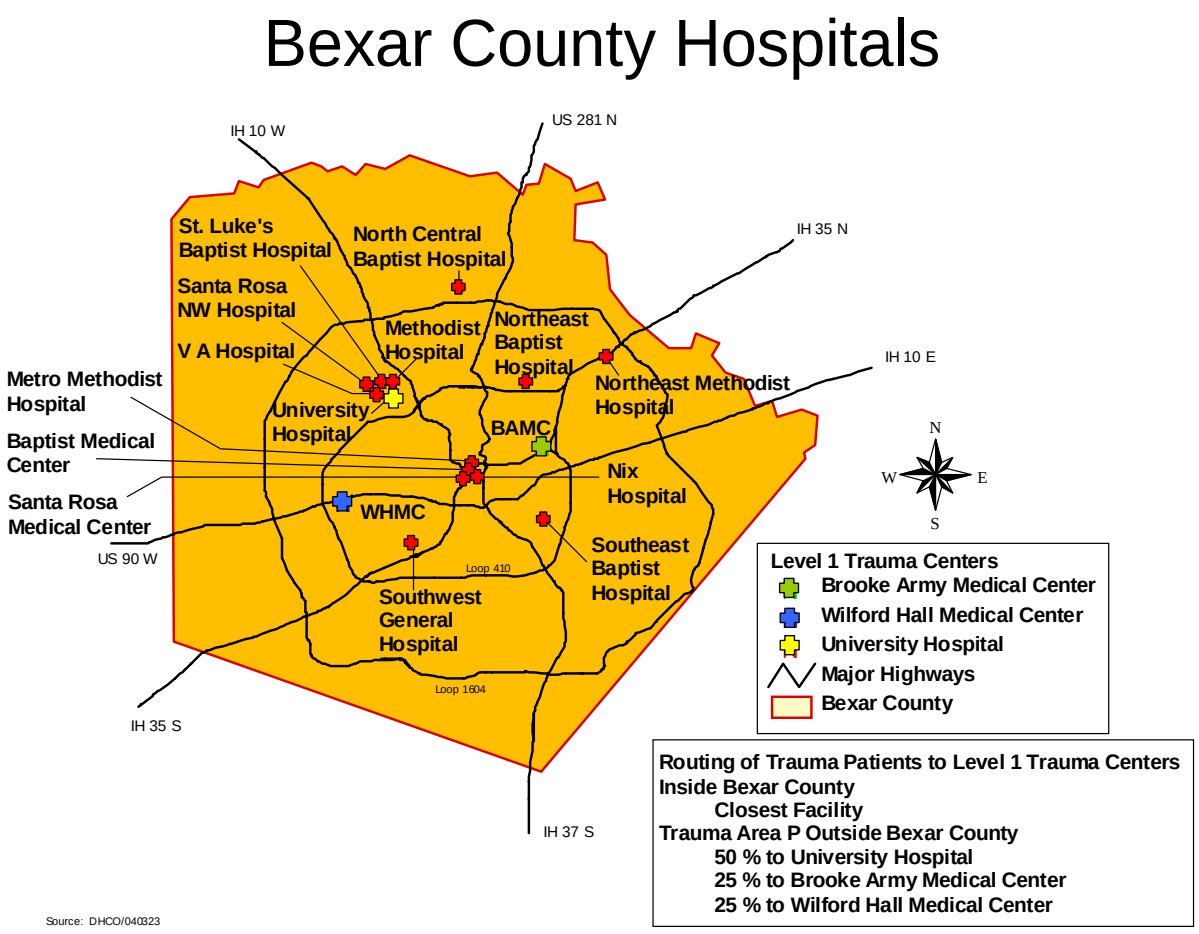
Strategy, as a responsibility of the Collaborative Plus Council, must be embraced by the affected organizations. This is not a step to take without due consideration, San Antonio market leaders must put their full support and effort into the endeavor and take the strategy to heart

(2004). The Collaborative Plus should not view itself as being in the top-level of a traditional organizational structure. This would imply power and would disrupt the mutually beneficial associations that the organization should be fostering. Semco, an organization renowned for its collaborative work process called "managing without managers," has successfully used a non-traditional organizational model for many years (Semler, 1989). The company credits this model for its ability to become one of Brazil's fastest growing companies (1989). The basis of Semco's non-traditional model can be adapted for the Collaborative Plus. Utilizing this structure, the Collaborative Plus operates as a small circle within a series of concentric circles and is responsible for integrating the movements of all circles in the formation (1989). A second, larger circle contains the individual boards of the health care organizations that belong to the Collaborative Plus (1989). Finally, a third circle contains all of the Collaborative Plus' established working groups or associated entities that the Collaborative Plus interacts with on both a permanent and temporary basis (1989). It is hoped that this type of structure will be perceived by all involved as non-threatening and will facilitate cooperation. However, true success will not be achieved until initiative development at the ground level (in the second and third circles) answers for its support of the Collaborative Plus strategic principles.

Bexar County, San Antonio, and the MHS are on the threshold of a golden opportunity. Each is making continued progress toward enhancing the quality of health care for its respective population. However, that progress is not sufficiently bold or far-reaching. Through the focused efforts of the Collaborative Plus, San Antonio could become an ideal community for delivering medical care in a cost effective way, on time and on target, with the goals that were set forth in healthier communities.

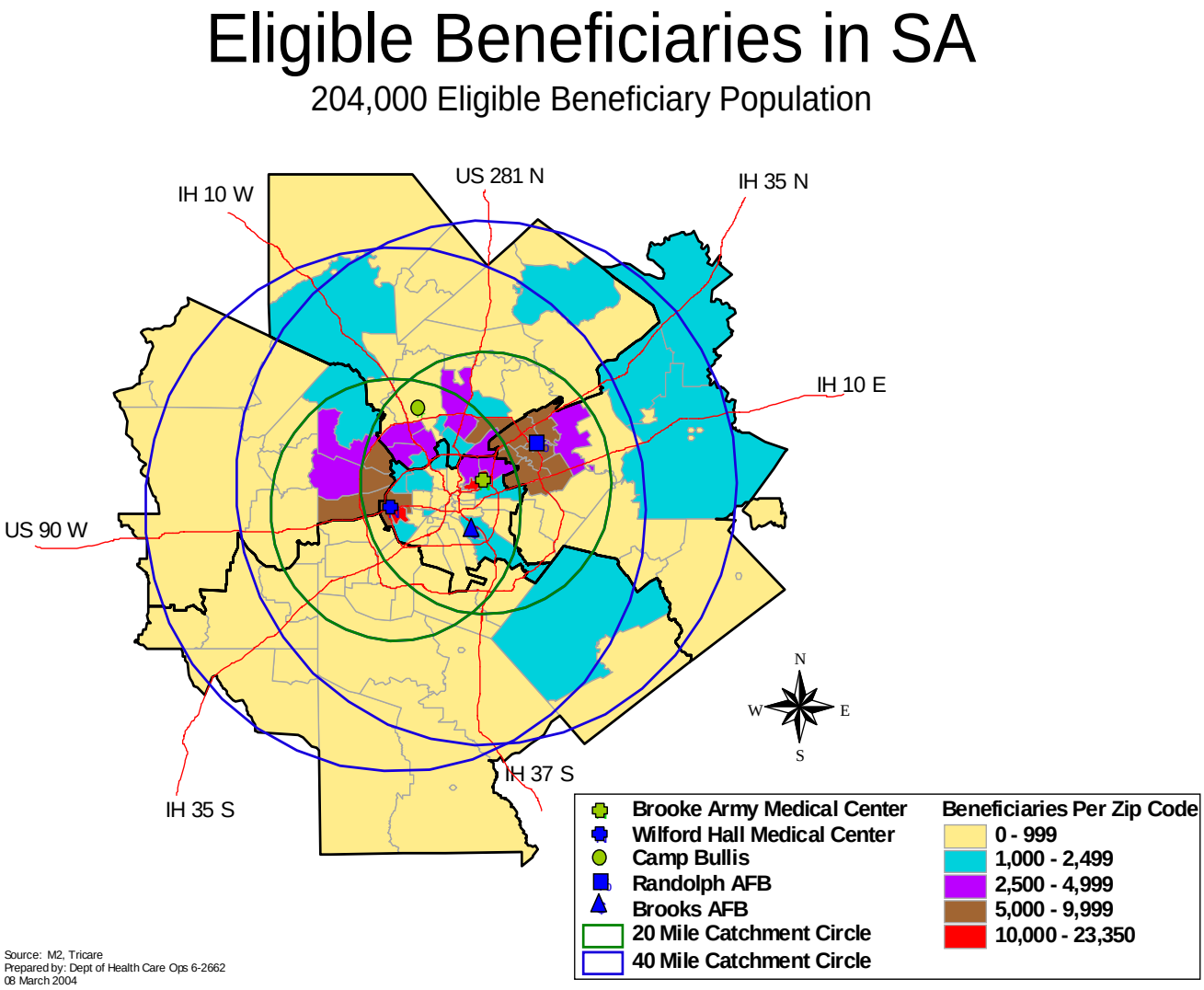
Appendix A: Maps of Interest

Figure A1. Locations of Medical Facilities in San Antonio



Source: Slide Image Capture from Masterson & Edward, 2004

Figure A2. Eligible Beneficiaries by Location



Source: Slide Image Capture from Masterson & Edward, 2004

Appendix B

Table B1.

Top 20 International Classification of Diseases Codes for Wilford Hall FY 03

International Classification of Diseases (ICD) Code	ICD Description	Total Number of Occurrences
465.9	ACUTE URI NOS	47,535
V65.49	OTH SPECFD COUNSELING	44,283
V67.59	OTHER FOLLOW-UP EXAMINATION	41,590
401.9	ESSENTIAL HYPERTENSION, UNSP	28,555
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	18,311
272.4	HYPERLIPIDEMIA NEC/NOS	15,968
250.00	DIABETES MELLIUS WO COMPLIC	14,912
367.1	MYOPIA	14,416
477.9	ALLERGIC RHINITIS NOS	12,759
427.31	ATRIAL FIBRILLATION	12,551
V58.61	LONG-TERM USE OF ANTICOAGULANT	11,261
V72.3	GYNECOLOGICAL EXAMINATION	11,006
V65.3	DIETARY SURVEILLANCE AND COUNS	10,819
V70.5	HEALTH EXAMINATION OF DEFINED	10,414
V20.2	ROUTINE INFANT OR CHILD HEALTH	9,368
V65.49 1	MEDICATION EDUCATION	8,660
V22.0	SUPERVISION OF NORMAL FIRST PR	8,533
V70.0	ROUTINE GENERAL MEDICAL EXAMIN	8,483
V57.1	CARE INVOLVING OTHER PHYSICAL	7,803
462	ACUTE PHARYNGITIS	7,583

Source: Original Data taken from Edward & Parkhurst, 2004

Table B2.

Top 20 International Classification of Diseases Codes for the 00 to 04 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
V65.49	OTH SPECFD COUNSELING	00-04	13,962
V20.2	ROUTINE INFANT OR CHILD HEALTH	00-04	7,535
465.9	ACUTE URI NOS	00-04	5,056
382.9	OTITIS MEDIA NOS	00-04	3,682
V06.8	NEED FOR PROPHYLACTIC VACCINAT	00-04	3,609
V67.59	OTHER FOLLOW-UP EXAMINATION	00-04	3,097
V72.1	EXAMINATION OF EARS & HEARING	00-04	2,667
780.6	FEVER	00-04	2,119
692.9	DERMATITIS NOS	00-04	1,189
462	ACUTE PHARYNGITIS	00-04	915
V82.5	SCREENING FOR CHEMICAL POISONI	00-04	869
558.9	NONINF GASTROENTERIT NEC	00-04	850
079.99	UNSPECIFIED VIRAL INFECTIONS	00-04	850
794.15	ABN AUDITORY FUNCT STUDY	00-04	823
372.30	CONJUNCTIVITIS NOS	00-04	805
V77.99	SCREEN-ENDOC/NUT/MET NEC	00-04	755
477.9	ALLERGIC RHINITIS NOS	00-04	751
518.89	OTHER DISEASE OF LUNG, NEC	00-04	695
786.2	COUGH	00-04	667
486	PNEUMONIA, ORGANISM NOS	00-04	645

Source: Original Data taken from Edward & Parkhurst, 2004

Table B3.

Top 20 International Classification of Diseases Codes for the 05 to 14 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
V65.49	OTH SPECFD COUNSELING	05-14	11,223
V67.59	OTHER FOLLOW-UP EXAMINATION	05-14	3,688
465.9	ACUTE URI NOS	05-14	3,142
462	ACUTE PHARYNGITIS	05-14	2,330
477.9	ALLERGIC RHINITIS NOS	05-14	2,310
314.01	ATTN DEFICIT W HYPERACT	05-14	1,910
493.90	ASTHMA,UNSPEC WO MENT,ASTHMAT	05-14	1,780
V20.2	ROUTINE INFANT OR CHILD HEALTH	05-14	1,735
382.9	OTITIS MEDIA NOS	05-14	1,642
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	05-14	1,634
780.6	FEVER	05-14	1,333
786.2	COUGH	05-14	796
079.99	UNSPECIFIED VIRAL INFECTIONS	05-14	769
367.1	MYOPIA	05-14	762
V65.49 1	MEDICATION EDUCATION	05-14	733
034.0	STREP SORE THROAT	05-14	732
V07.1	NEED FOR DESENSITIZATION TO AL	05-14	704
473.9	CHRONIC SINUSITIS NOS	05-14	633
692.9	DERMATITIS NOS	05-14	587
784.0	HEADACHE	05-14	576

Source: Original Data taken from Edward & Parkhurst, 2004

Table B4.

Top 20 International Classification of Diseases Codes for the 15 to 24 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
465.9	ACUTE URI NOS	15-24	31,049
V65.49	OTH SPECFD COUNSELING	15-24	7,120
V67.59	OTHER FOLLOW-UP EXAMINATION	15-24	5,873
309.0	BRIEF DEPRESSIVE REACT	15-24	4,833
V70.5	HEALTH EXAMINATION OF DEFINED	15-24	4,697
V70.0	ROUTINE GENERAL MEDICAL EXAMIN	15-24	4,025
V22.0	SUPERVISION OF NORMAL FIRST PR	15-24	3,369
V71.09	OBSERVATION OF OTHER SUSPECTED	15-24	3,192
V67.9	UNSPECIFIED FOLLOW-UP EXAMINAT	15-24	3,098
309.28	ADJ REACT-MIXED EMOTION	15-24	2,913
848.9	SPRAIN NOS	15-24	2,761
V79.9	SCREEN,UNSPEC MENTAL DISORDER	15-24	2,713
780.6	FEVER	15-24	2,548
719.46	JOINT PAIN-L/LEG	15-24	2,534
462	ACUTE PHARYNGITIS	15-24	2,313
V65.3	DIETARY SURVEILLANCE AND COUNS	15-24	2,261
367.1	MYOPIA	15-24	2,244
V72.3	GYNECOLOGICAL EXAMINATION	15-24	2,103
V68.89	ENCOUNTERS FOR OTHER SPECIFIED	15-24	1,899
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	15-24	1,719

Source: Original Data taken from Edward & Parkhurst, 2004

Table B5.

Top 20 International Classification of Diseases Codes for the 25 to 34 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
465.9	ACUTE URI NOS	25-34	4,412
367.1	MYOPIA	25-34	4,399
V22.0	SUPERVISION OF NORMAL FIRST PR	25-34	4,192
V65.49	OTH SPECFD COUNSELING	25-34	2,703
V22.1	SUPERVISION OF OTHER NORMAL PR	25-34	2,603
V70.5 7	FITNESS FOR DUTY EXAMINATION	25-34	2,480
V67.59	OTHER FOLLOW-UP EXAMINATION	25-34	2,367
V65.3	DIETARY SURVEILLANCE AND COUNS	25-34	2,315
V72.3	GYNECOLOGICAL EXAMINATION	25-34	1,982
628.9	FEMALE INFERTILITY NOS	25-34	1,673
739.2	SOMAT DYSFUNC THORAC REG	25-34	1,467
V57.1	CARE INVOLVING OTHER PHYSICAL	25-34	1,377
739.1	SOMAT DYSFUNC CERVIC REG	25-34	1,367
477.9	ALLERGIC RHINITIS NOS	25-34	1,341
V70.0	ROUTINE GENERAL MEDICAL EXAMIN	25-34	1,321
V68.89	ENCOUNTERS FOR OTHER SPECIFIED	25-34	1,313
V65.49 1	MEDICATION EDUCATION	25-34	1,298
739.4	SOMAT DYSFUNC SACRAL REG	25-34	1,274
644.13	LABOR CHECK	25-34	1,267
V71.09	OBSERVATION OF OTHER SUSPECTED	25-34	1,254

Source: Original Data taken from Edward & Parkhurst, 2004

Table B6.

Top 20 International Classification of Diseases Codes for the 35 to 44 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
367.1	MYOPIA	35-44	4,586
V70.5	HEALTH EXAMINATION OF DEFINED	35-44	4,249
V67.59	OTHER FOLLOW-UP EXAMINATION	35-44	3,476
V65.49	OTH SPECFD COUNSELING	35-44	2,572
739.2	SOMAT DYSFUNC THORAC REG	35-44	2,166
739.1	SOMAT DYSFUNC CERVIC REG	35-44	2,003
739.4	SOMAT DYSFUNC SACRAL REG	35-44	1,981
V72.3	GYNECOLOGICAL EXAMINATION	35-44	1,903
V70.5 7	FITNESS FOR DUTY EXAMINATION	35-44	1,859
V65.3	DIETARY SURVEILLANCE AND COUNS	35-44	1,758
401.9	ESSENTIAL HYPERTENSION, UNSP	35-44	1,749
477.9	ALLERGIC RHINITIS NOS	35-44	1,723
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	35-44	1,574
V57.1	CARE INVOLVING OTHER PHYSICAL	35-44	1,557
V07.1	NEED FOR DESENSITIZATION TO AL	35-44	1,534
724.2	LUMBAGO	35-44	1,322
739.3	SOMAT DYSFUNC LUMBAR REG	35-44	1,272
V65.49 1	MEDICATION EDUCATION	35-44	1,189
465.9	ACUTE URI NOS	35-44	1,158
V65.41	EXERCISE COUNSELING	35-44	1,135

Source: Original Data taken from Edward & Parkhurst, 2004

Table B7.

Top 20 International Classification of Diseases Codes for the 45 to 54 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
V67.59	OTHER FOLLOW-UP EXAMINATION	45-54	4,532
401.9	ESSENTIAL HYPERTENSION, UNSP	45-54	3,875
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	45-54	2,402
272.4	HYPERLIPIDEMIA NEC/NOS	45-54	2,004
V72.3	GYNECOLOGICAL EXAMINATION	45-54	1,826
250.00	DIABETES MELLIUS WO COMPLIC	45-54	1,824
V65.49	OTH SPECFD COUNSELING	45-54	1,794
367.4	PRESBYOPIA	45-54	1,781
477.9	ALLERGIC RHINITIS NOS	45-54	1,771
367.1	MYOPIA	45-54	1,583
V07.1	NEED FOR DESENSITIZATION TO AL	45-54	1,192
530.81	ESOPHAGEAL REFLUX	45-54	1,128
V65.3	DIETARY SURVEILLANCE AND COUNS	45-54	1,128
724.2	LUMBAGO	45-54	1,018
V57.1	CARE INVOLVING OTHER PHYSICAL	45-54	984
465.9	ACUTE URI NOS	45-54	906
V65.49 1	MEDICATION EDUCATION	45-54	846
739.1	SOMAT DYSFUNC CERVIC REG	45-54	836
V76.10	SCR MALIG NEOPL,BREAST SCR,UNS	45-54	835
V25.09	OTH GENERAL COUNSELING,ADVICE	45-54	827

Source: Original Data taken from Edward & Parkhurst, 2004

Table B8.

Top 20 International Classification of Diseases Codes for the 55 to 64 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
401.9	ESSENTIAL HYPERTENSION, UNSP	55-64	7,803
V67.59	OTHER FOLLOW-UP EXAMINATION	55-64	6,440
250.00	DIABETES MELLIUS WO COMPLIC	55-64	4,061
272.4	HYPERLIPIDEMIA NEC/NOS	55-64	3,969
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	55-64	3,410
367.4	PRESBYOPIA	55-64	2,192
427.31	ATRIAL FIBRILLATION	55-64	1,790
V58.61	LONG-TERM USE OF ANTICOAGULANT	55-64	1,751
V65.49	OTH SPECFD COUNSELING	55-64	1,661
V72.3	GYNECOLOGICAL EXAMINATION	55-64	1,655
477.9	ALLERGIC RHINITIS NOS	55-64	1,617
530.81	ESOPHAGEAL REFLUX	55-64	1,360
414.00	CORO ATHERO UNSP NATIVE GRAFT	55-64	1,317
V65.3	DIETARY SURVEILLANCE AND COUNS	55-64	1,267
V57.1	CARE INVOLVING OTHER PHYSICAL	55-64	1,230
366.16	SENILE NUCLEAR CATARACT	55-64	1,154
724.2	LUMBAGO	55-64	960
V76.51	SCREEN MALIG NEOP-COLON	55-64	931
244.9	HYPOTHYROIDISM NOS	55-64	877
V76.10	SCR MALIG NEOPL,BREAST SCR,UNS	55-64	824

Source: Original Data taken from Edward & Parkhurst, 2004

Table B9.

Top 20 International Classification of Diseases Codes for the 65 to 74 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
401.9	ESSENTIAL HYPERTENSION, UNSP	65-74	9,467
V67.59	OTHER FOLLOW-UP EXAMINATION	65-74	7,756
272.4	HYPERLIPIDEMIA NEC/NOS	65-74	5,963
250.00	DIABETES MELLIUS WO COMPLIC	65-74	5,818
427.31	ATRIAL FIBRILLATION	65-74	4,784
V58.61	LONG-TERM USE OF ANTICOAGULANT	65-74	4,397
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	65-74	4,068
414.00	CORO ATHERO UNSP NATIVE GRAFT	65-74	3,324
272.4	HYPERLIPIDEMIA	65-74	1,951
V65.40	COUNSELING, HEALTH	65-74	1,950
401.1	BENIGN HYPERTENSION	65-74	1,681
V65.49	OTH SPECFD COUNSELING	65-74	1,667
V58.83	THERAPEUTIC DRUG MONITOR	65-74	1,609
496	CHR AIRWAY OBSTRUCT NEC	65-74	1,555
530.81	ESOPHAGEAL REFLUX	65-74	1,456
389.10	SENSORNEUR HEAR LOSS NOS	65-74	1,411
V65.3	DIETARY SURVEILLANCE AND COUNS	65-74	1,216
V72.3	GYNECOLOGICAL EXAMINATION	65-74	1,206
V65.49 1	MEDICATION EDUCATION	65-74	1,190
477.9	ALLERGIC RHINITIS NOS	65-74	1,154

Source: Original Data taken from Edward & Parkhurst, 2004

Table B10.

Top 20 International Classification of Diseases Codes for the 75 to 84 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
427.31	ATRIAL FIBRILLATION	75-84	4,135
401.9	ESSENTIAL HYPERTENSION, UNSP	75-84	4,100
V67.59	OTHER FOLLOW-UP EXAMINATION	75-84	3,486
V58.61	LONG-TERM USE OF ANTICOAGULANT	75-84	3,341
272.4	HYPERLIPIDEMIA NEC/NOS	75-84	2,462
250.00	DIABETES MELLIUS WO COMPLIC	75-84	1,950
414.00	CORO ATHERO UNSP NATIVE GRAFT	75-84	1,802
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	75-84	1,744
389.10	SENSORNEUR HEAR LOSS NOS	75-84	1,408
401.1	BENIGN HYPERTENSION	75-84	1,254
272.4	HYPERLIPIDEMIA	75-84	1,088
V65.40	COUNSELING, HEALTH	75-84	1,085
V58.83	THERAPEUTIC DRUG MONITOR	75-84	1,037
V65.49	OTH SPECFD COUNSELING	75-84	756
496	CHR AIRWAY OBSTRUCT NEC	75-84	744
V65.49 1	MEDICATION EDUCATION	75-84	685
V43.1	LENS REPLACED BY OTHER MEANS	75-84	627
365.11	PRIM OPEN ANGLE GLAUCOMA	75-84	625
366.10	SENILE CATARACT NOS	75-84	612
702.0	ACTINIC KERATOSIS	75-84	593

Source: Original Data taken from Edward & Parkhurst, 2004

Table B11.

Top 20 International Classification of Diseases Codes for the 85 to 120 Age Range in FY 03

ICD Code	ICD Description	Age Range Value	Total Number of Occurrences
V67.59	OTHER FOLLOW-UP EXAMINATION	85-120	770
401.9	ESSENTIAL HYPERTENSION, UNSP	85-120	760
427.31	ATRIAL FIBRILLATION	85-120	726
V58.61	LONG-TERM USE OF ANTICOAGULANT	85-120	514
414.00	CORO ATHERO UNSP NATIVE GRAFT	85-120	456
389.10	SENSORNEUR HEAR LOSS NOS	85-120	427
272.4	HYPERLIPIDEMIA NEC/NOS	85-120	398
V68.1	ISSUE OF REPEAT PRESCRIPTIONS	85-120	338
250.00	DIABETES MELLIUS WO COMPLIC	85-120	250
380.4	IMPACTED CERUMEN	85-120	228
401.1	BENIGN HYPERTENSION	85-120	226
365.11	PRIM OPEN ANGLE GLAUCOMA	85-120	199
V45.01	CARDIAC PACEMAKER IN SITU	85-120	190
V58.83	THERAPEUTIC DRUG MONITOR	85-120	188
702.0	ACTINIC KERATOSIS	85-120	173
428.0	CONGESTIVE HEART FAILURE, UNSP	85-120	162
V65.49	OTH SPECFD COUNSELING	85-120	160
285.9	ANEMIA NOS	85-120	141
V43.1	LENS REPLACED BY OTHER MEANS	85-120	137
366.10	SENILE CATARACT NOS	85-120	137

Source: Original Data taken from Edward & Parkhurst, 2004

Appendix C: Top 25 Appointment Types by Beneficiary Category in FY 03

Table C1.

Top 25 Appointment Types for TRICARE Prime

Clinic	Number of Appointments	Percentage of Appointments
Pediatric	61,695	20%
Family Medicine	50,298	16%
Emergency	20,324	7%
Gynecology	18,422	6%
Obstetrics	14,547	5%
Cardiology	12,757	4%
Physical Therapy	12,645	4%
Ophthalmology	8,922	3%
General Surgery	7,720	2%
Allergy	6,763	2%
Dermatology	3,763	1%
Orthopedics	3,423	1%
Occupational Therapy	6,069	2%
Optometry	5,745	2%
Otolaryngology	5,152	2%
Urology	5,110	2%
Internal Medicine	4,925	2%
Neurology	4,226	1%
APU	4,053	1%
Radiology	4,005	1%
Endocrinology	3,877	1%
Gastroenterology	3,653	1%
Rheumatology	3,281	1%
Pulmonary	2,831	1%
Orthotics	2,485	1%
Other	33,286	11%
Total	309,977	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Table C2.

Top 25 Appointment Types for Active Duty Non-Enrolled

Clinic	Number of Appointments	Percentage of Appointments
Family Medicine	86,205	48%
Emergency	11,831	7%
Psychiatry	11,022	6%
Psychology	7,930	4%
Optometry	7,926	4%
Flight Medicine	7,298	4%
Physical Therapy	6,631	4%
Ophthalmology	3,702	2%
Cardiology	2,841	2%
Orthotics	2,716	2%
Social Work	2,664	1%
Dermatology	2,410	1%
Gynecology	1,907	1%
Obstetrics	1,704	1%
Chiropractic	1,666	1%
General Surgery	1,581	1%
Allergy	1,544	1%
Nutrition	1,393	1%
APU	1,378	1%
Infectious Disease	1,357	1%
Occupational Therapy	1,286	1%
Pulmonary	1,169	1%
Preventative Medicine	1,099	1%
Urology	1,080	1%
Neurology	1,056	1%
Other	8,372	5%
Total	179,768	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Table C3.

Top 25 Appointment Types for TRICARE Plus

Clinic	Number of Appointments	Percentage of Appointments
Internal Medicine	24,839	18%
Cardiology	22,545	16%
Family Medicine	11,732	8%
Ophthalmology	10,718	8%
Emergency	6,511	5%
Radiology	5,401	4%
Urology	5,116	4%
Dermatology	4,734	3%
General Surgery	4,305	3%
Pulmonary	3,576	3%
Orthopedics	3,357	2%
Endocrinology	2,893	2%
Otalaryngology	2,857	2%
Physical Therapy	2,667	2%
Vascular	2,507	2%
Neurology	2,191	2%
Gynecology	2,184	2%
APU	2,164	2%
Audiology	1,957	1%
Rheumatology	1,819	1%
Gastroenterology	1,797	1%
Oncology	1,564	1%
Nephrology	1,494	1%
Occupational Therapy	1,180	1%
Orthotics	895	1%
Other	8,521	6%
Total	139,524	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Table C4.

Top 25 Appointment Types for Active Duty Enrolled

Clinic	Number of Appointments	Percentage of Appointments
Family Medicine	24,850	24%
Physical Therapy	7,018	7%
Ophthalmology	5,766	6%
Chiropractic	5,483	5%
Gynecology	5,459	5%
Emergency	5,234	5%
Preventative Medicine	4,684	5%
Obstetrics	4,599	5%
Optometry	3,069	3%
Psychology	2,831	3%
Psychiatry	2,768	3%
Orthopedics	2,386	2%
Social Work	2,073	2%
Allergy	2,068	2%
Dermatology	1,973	2%
Occupational Therapy	1,965	2%
Pulmonary	1,679	2%
Cardiology	1,660	2%
Flight Medicine	1,618	2%
General Surgery	1,573	2%
Otalaryngology	1,208	1%
APU	1,171	1%
Nutrition	1,151	1%
Urology	1,049	1%
Orthotics	937	1%
Other	7,742	8%
Total	102,014	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Table C5.

Top 25 Appointment Types for Space Available, Less Than 65 Years

Clinic	Number of Appointments	Percentage of Appointments
Pediatric	17,388	21%
Emergency	9,419	12%
Obstetrics	6,566	8%
Gynecology	4,614	6%
Family Medicine	3,866	5%
Cardiology	2,969	4%
General Surgery	2,924	4%
Physical Therapy	2,720	3%
Orthopedics	2,629	3%
Social Work	1,886	2%
Ophthalmology	1,814	2%
Infectious Disease	1,649	2%
Otalyrngology	1,601	2%
APU	1,357	2%
Radiology	1,350	2%
Urology	1,326	2%
Flight Medicine	1,311	2%
Hematology	1,210	1%
Occupational Therapy	1,109	1%
Neurosurgery	1,093	1%
Dermatology	1,090	1%
Neurology	1,043	1%
Allergy	1,006	1%
Optometry	868	1%
Audiology	863	1%
Other	7,761	10%
Total	81,432	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Table C6.

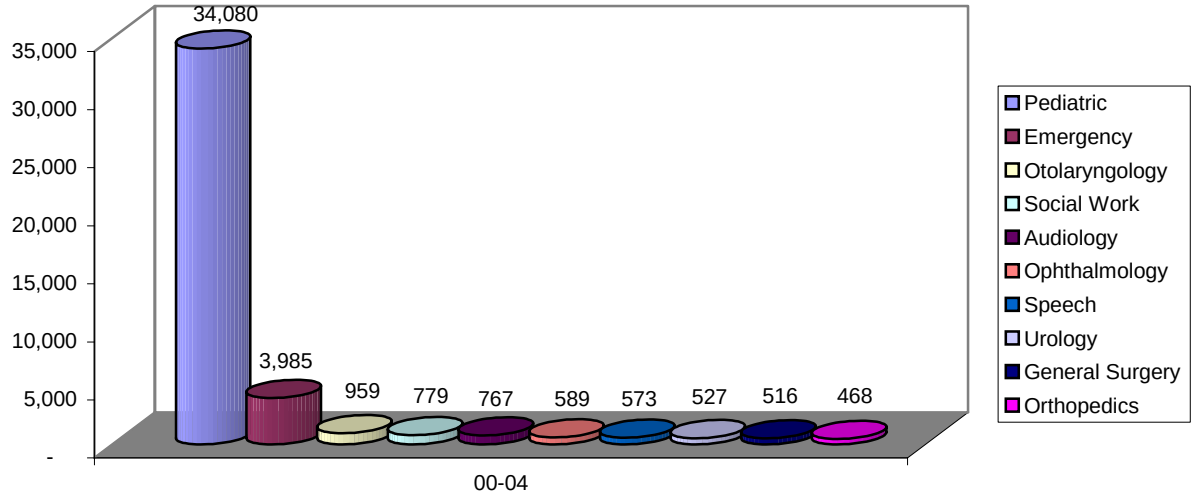
Top 25 Appointment Types for Space Available, Greater Than 65 Years

Clinic	Number of Appointments	Percentage of Appointments
Cardiology	9,932	23%
Emergency	3,252	8%
Ophthalmology	2,884	7%
Internal Medicine	2,702	6%
Radiology	2,340	5%
Urology	2,267	5%
Physical Therapy	1,774	4%
Audiology	1,525	4%
General Surgery	1,497	3%
Oncology	1,227	3%
Pulmonary	1,183	3%
Otalaryngology	1,148	3%
Vascular	1,009	2%
Endocrinology	1,008	2%
Orthopedics	986	2%
Neurology	775	2%
Dermatology	755	2%
Nephrology	143	0%
Social Work	124	0%
Infectious Disease	708	2%
APU	676	2%
Rheumatology	568	1%
Gastroenterology	513	1%
Hematology	479	1%
Neurosurgery	348	1%
Other	3,146	7%
Total	42,969	100%

Source: Original Data taken from Edward & Parkhurst, 2004

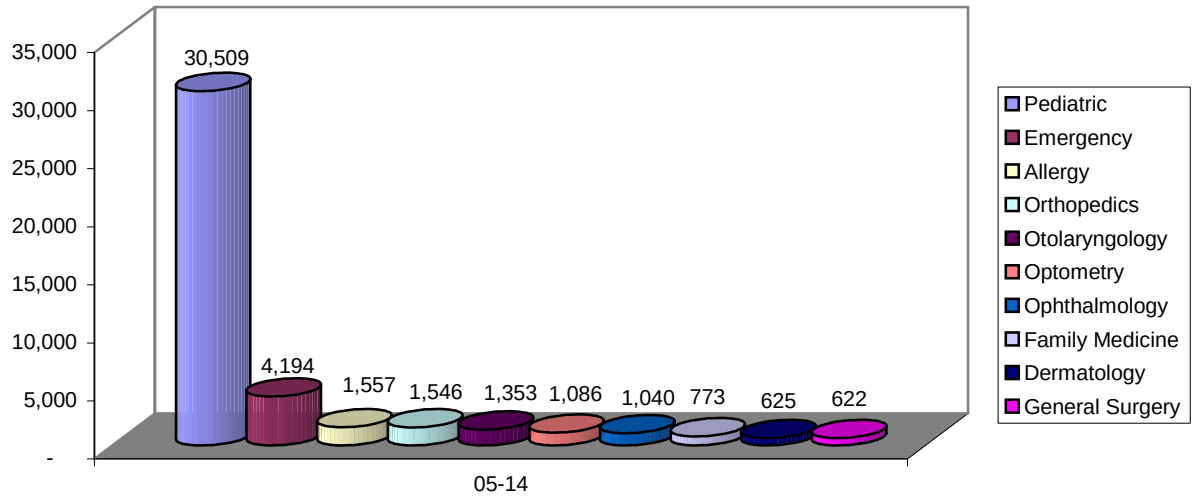
Appendix D: Top 10 Appointment Types by Age Category in FY 03

Figure D1. Top 10 Appointment Types for Ages 00 to 04



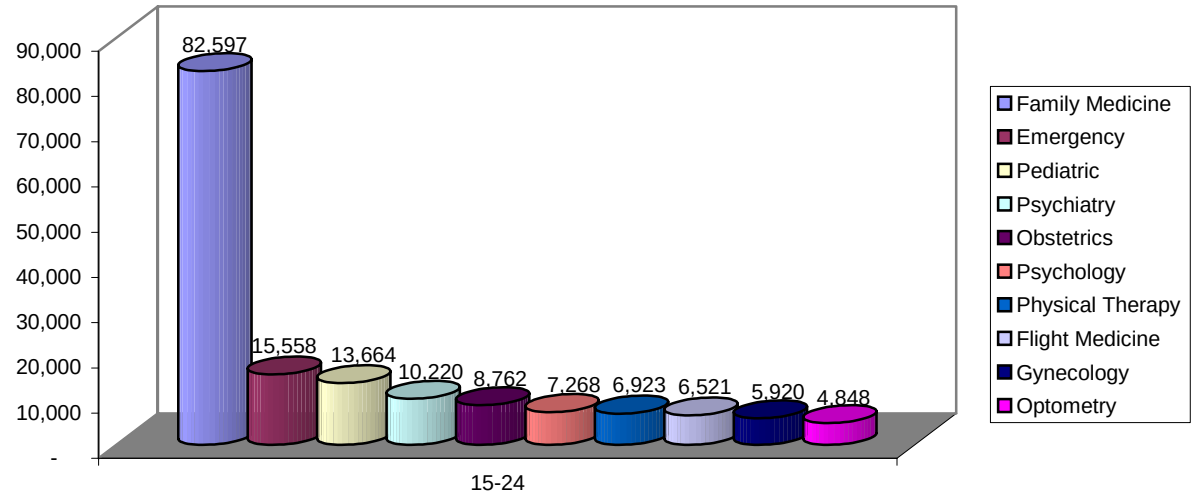
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D2. Top 10 Appointment Types for Ages 05 to 14



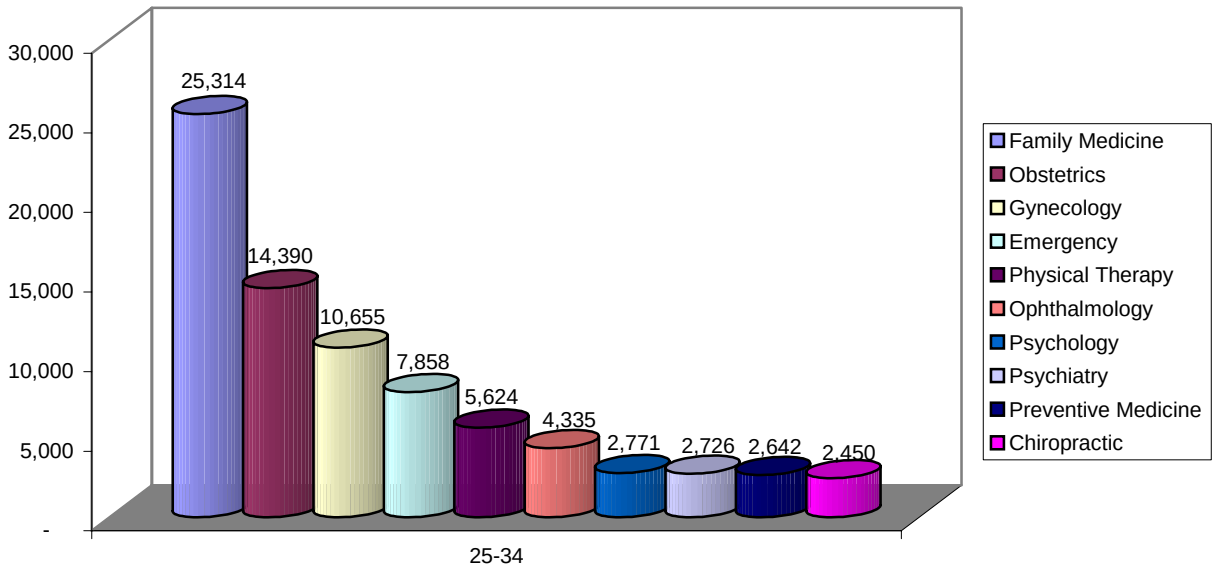
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D3. Top 10 Appointment Types for Ages 15 to 24



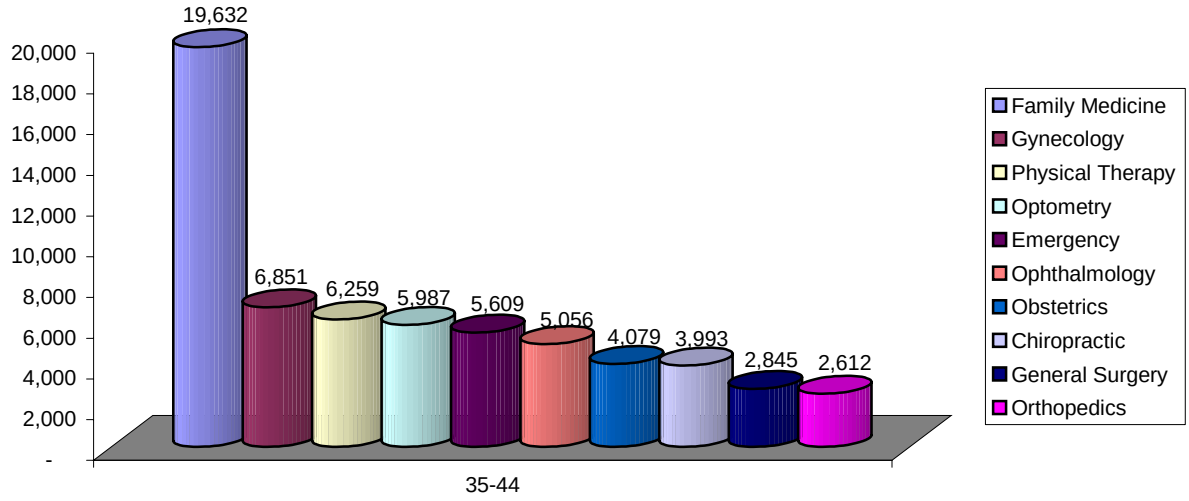
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D4. Top 10 Appointment Types for Ages 25 to 34



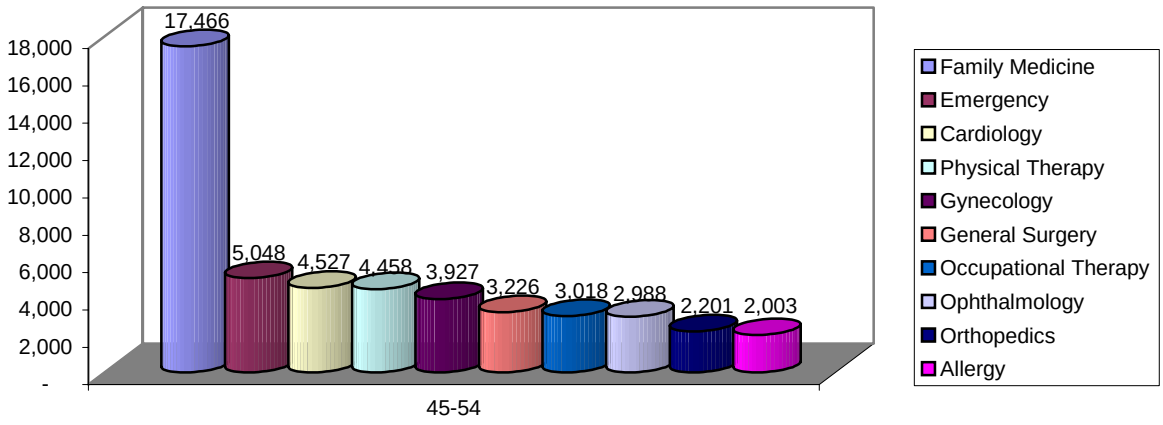
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D5. Top 10 Appointment Types for Ages 35-44



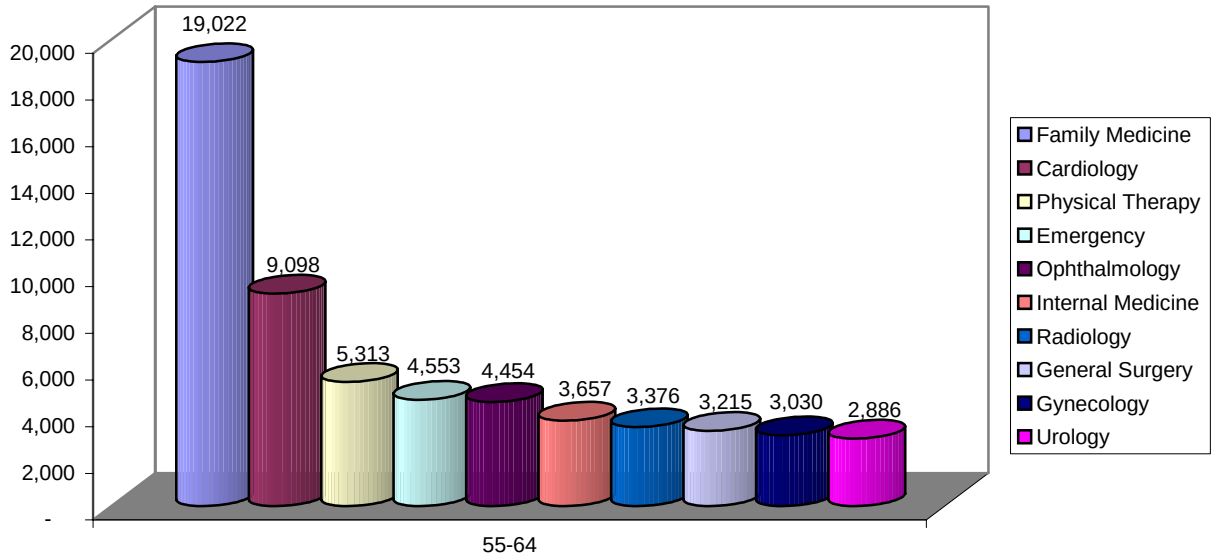
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D6. Top 10 Appointment Types for Ages 45-54



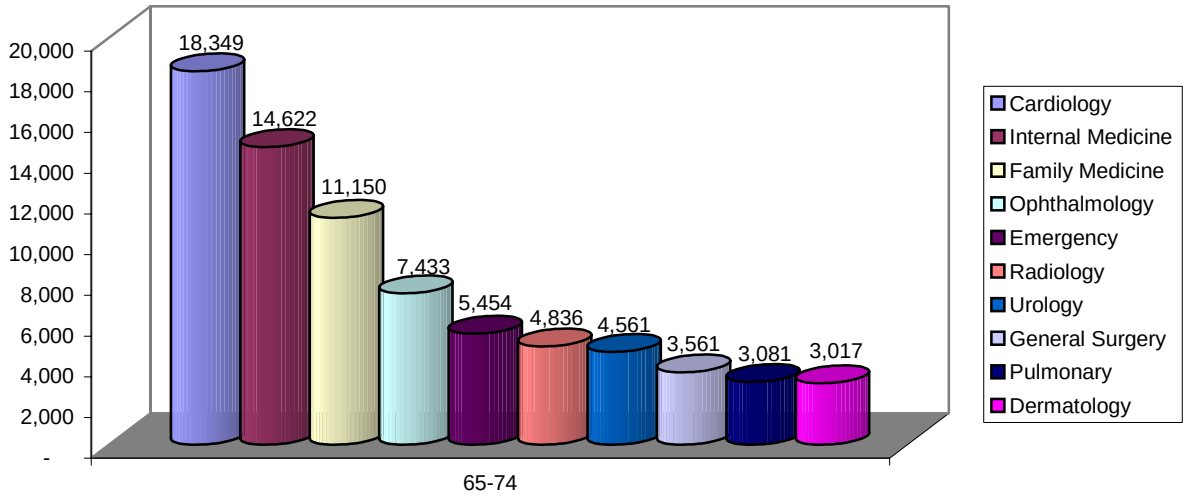
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D7. Top 10 Appointment Types for Ages 55 to 64



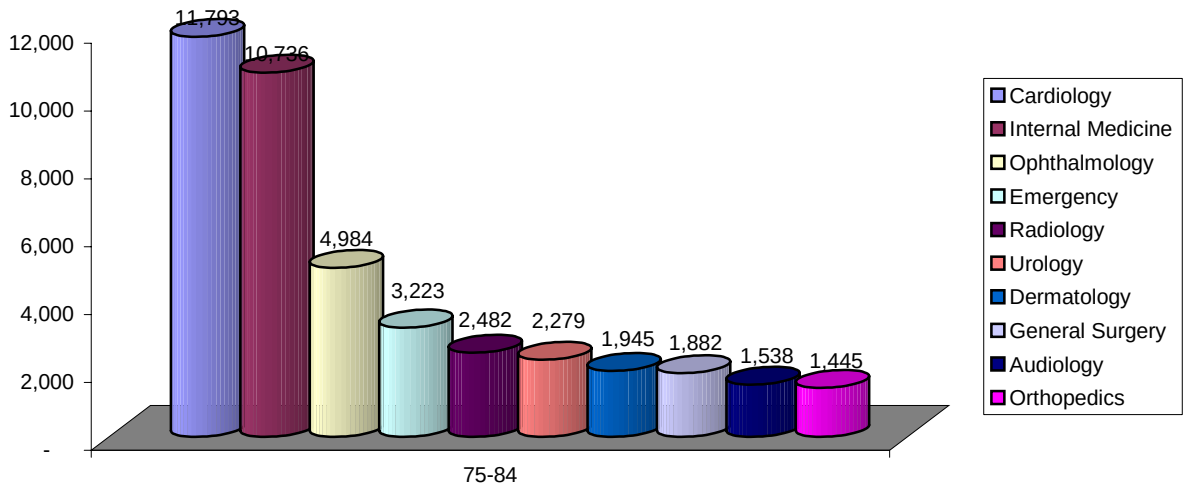
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D8. Top 10 Appointment Types for Ages 65 to 74



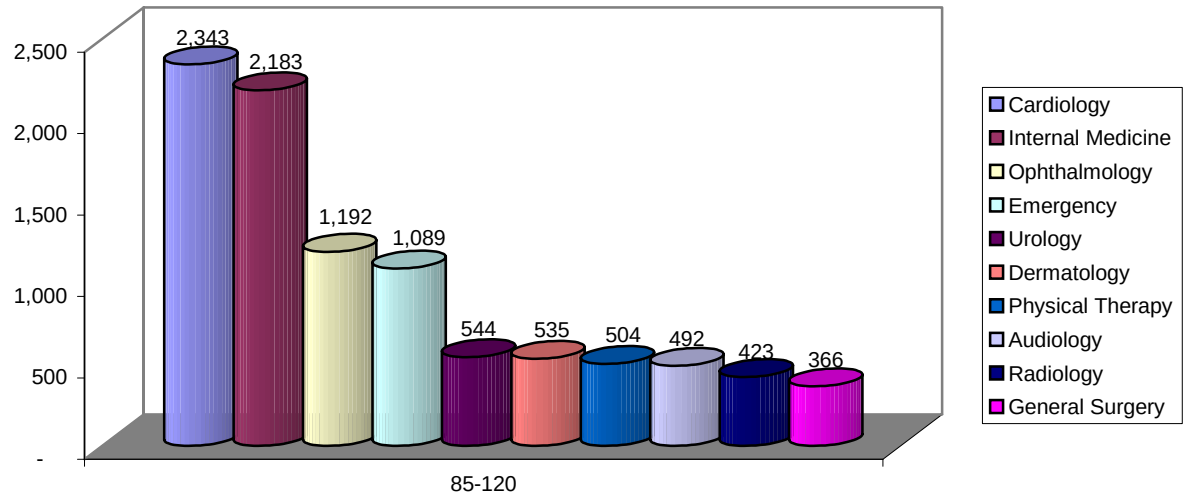
Source: Original Data taken from Edward & Parkhurst, 2004

Figure D9. Top 10 Appointment Types for Ages 75 to 84



Source: Original Data taken from Edward & Parkhurst, 2004

Figure D10. Top 10 Appointment Types for Ages 85 to 120



Source: Original Data taken from Edward & Parkhurst, 2004

Table D1.

FY 03 Clinic Appointment Types by Age Ranges: 00 to 04, 05 to 14, and 15 to 24

Clinic Category	00-04	Clinic Category	05-14	Clinic Category	15-24
Pediatric	34,080	Pediatric	30,509	Family Medicine	82,597
Emergency	3,985	Emergency	4,194	Emergency	15,558
Otolaryngology	959	Allergy	1,557	Pediatric	13,664
Social Work	779	Orthopedics	1,546	Psychiatry	10,220
Audiology	767	Otolaryngology	1,353	Obstetrics	8,762
Ophthalmology	589	Optometry	1,086	Psychology	7,268
Speech	573	Ophthalmology	1,040	Physical Therapy	6,923
Urology	527	Family Medicine	773	Flight Medicine	6,521
General Surgery	516	Dermatology	625	Gynecology	5,920
Orthopedics	468	General Surgery	622	Optometry	4,848
APU	414	Audiology	568	Orthopedics	2,904
Family Medicine	412	APU	532	Dermatology	2,794
Neurosurgery	364	Speech	520	Social Work	2,794
Allergy	356	Urology	498	Cardiology	2,408
Dermatology	303	Social Work	401	Allergy	1,876
Pediatric Surgery	219	Physical Therapy	337	Ophthalmology	1,735
Plastic Surgery	154	Orthotics	309	Nutrition	1,652
Nutrition	147	Neurosurgery	246	General Surgery	1,401
Occupational Therapy	118	Pediatric Surgery	188	APU	1,330
Nephrology	100	Nutrition	172	Preventive Medicine	1,296
Physical Therapy	100	Neurology	156	Otolaryngology	1,008
Neurology	93	Cardiology	155	Occupational Therapy	991
Orthotics	59	Plastic Surgery	134	Podiatry	878
Infectious Disease	58	Rheumatology	122	Chiropractic	875
Cardiology	49	Occupational Therapy	103	Orthotics	818
Obstetrics	24	Podiatry	85	Urology	682
Psychology	15	Obstetrics	74	Neurology	680
Optometry	14	Radiology	72	Pulmonary	626
Rheumatology	13	Psychology	43	Infectious Disease	440
Flight Medicine	7	Infectious Disease	37	Neurosurgery	379
Podiatry	7	Pulmonary	33	Audiology	368
Psychiatry	4	Gynecology	18	Gastroenterology	339
Vascular	4	Pain Management	14	Rheumatology	326
Pain Management	3	Nephrology	13	Hematology	271
Miscellaneous	2	Hematology	11	Plastic Surgery	258
Public Health	2	Preventive Medicine	8	Radiology	233
Gynecology	1	Psychiatry	8	Endocrinology	226
Interventional Rad	1	Flight Medicine	7	Nephrology	148

Preventive Medicine	1	Vascular	7	Pain Management	145
Pulmonary	1	Public Health	5	Internal Medicine	140
Cardio thoracic	-	Endocrinology	2	Oncology	132
Chiropractic	-	Gastroenterology	2	Speech	131
Endocrinology	-	Interventional Rad	2	Pediatric Surgery	77
Gastroenterology	-	Cardio thoracic	1	Interventional Rad	30
Hematology	-	Chiropractic	1	Vascular	28
Internal Medicine	-	Internal Medicine	1	Cardio thoracic	23
Oncology	-	Miscellaneous	-	Public Health	20
Radiology	-	Oncology	-	Miscellaneous	5
TOTAL	46,288		48,190		192,748

Source: Original Data taken from Edward & Parkhurst, 2004

Table D2.

FY 03 Appointment Types by Age Ranges: 25 to 43, 35 to 44, and 45 to 54

Clinic Category	25-34	Clinic Category	35-44	Clinic Category	45-54
Family Medicine	25,314	Family Medicine	19,632	Family Medicine	17,466
Obstetrics	14,390	Gynecology	6,851	Emergency	5,048
Gynecology	10,655	Physical Therapy	6,259	Cardiology	4,527
Emergency	7,858	Optometry	5,987	Physical Therapy	4,458
Physical Therapy	5,624	Emergency	5,609	Gynecology	3,927
Ophthalmology	4,335	Ophthalmology	5,056	General Surgery	3,226
Psychology	2,771	Obstetrics	4,079	Occupational Therapy	3,018
Psychiatry	2,726	Chiropractic	3,993	Ophthalmology	2,988
Preventive Medicine	2,642	General Surgery	2,845	Orthopedics	2,201
Chiropractic	2,450	Orthopedics	2,612	Allergy	2,003
Flight Medicine	2,283	Allergy	2,554	Dermatology	1,884
Dermatology	2,267	Cardiology	2,523	Optometry	1,884
Optometry	2,198	Preventive Medicine	2,444	Neurology	1,765
Orthopedics	2,186	Occupational Therapy	2,316	Radiology	1,679
Social Work	2,056	Dermatology	2,054	Gastroenterology	1,675
General Surgery	1,966	Pulmonary	1,818	Urology	1,645
Allergy	1,702	Psychiatry	1,810	APU	1,548
Cardiology	1,459	Infectious Disease	1,738	Otolaryngology	1,438
Nutrition	1,420	Neurology	1,676	Endocrinology	1,397
Occupational Therapy	1,281	Psychology	1,547	Pulmonary	1,244
Neurology	1,114	Otolaryngology	1,500	Rheumatology	1,217
Otolaryngology	1,103	Flight Medicine	1,406	Internal Medicine	1,215
APU	1,076	APU	1,354	Chiropractic	1,134
Infectious Disease	1,022	Urology	1,305	Infectious Disease	922
Urology	1,021	Social Work	1,233	Orthotics	866
Pulmonary	877	Nutrition	1,024	Hematology	845
Orthotics	737	Orthotics	978	Audiology	836
Podiatry	629	Gastroenterology	956	Podiatry	784
Gastroenterology	549	Endocrinology	913	Psychiatry	770
Endocrinology	545	Audiology	882	Oncology	670
Pediatric	543	Hematology	872	Pain Management	661

Hematology	531	Podiatry	863	Nutrition	594
Audiology	485	Radiology	831	Psychology	555
Neurosurgery	418	Rheumatology	740	Flight Medicine	548
Rheumatology	341	Neurosurgery	727	Social Work	476
Pain Management	337	Pain Management	671	Neurosurgery	467
Radiology	309	Internal Medicine	514	Preventive Medicine	463
Internal Medicine	242	Pediatric	449	Nephrology	460
Plastic Surgery	225	Plastic Surgery	436	Plastic Surgery	420
Oncology	212	Nephrology	402	Vascular	374
Vascular	151	Oncology	381	Speech	154
Nephrology	146	Vascular	223	Pediatric	114
Speech	116	Speech	200	Public Health	86
Public Health	53	Public Health	69	Interventional Rad	77
Interventional Rad	45	Interventional Rad	58	Cardio thoracic	74
Cardio thoracic	28	Cardio thoracic	35	Obstetrics	73
Miscellaneous	11	Miscellaneous	23	Miscellaneous	19
Pediatric Surgery	3	Pediatric Surgery	3	Pediatric Surgery	1
Total	110,452		102,451		79,896

Source: Original Data taken from Edward & Parkhurst, 2004

Table D3.

FY 03 Appointment Type by Age Ranges: 55 to 64, 65 to 74, 75 to 84

Clinic Category	55-64	Clinic Category	65-74	Clinic Category	75-84
Family Medicine	19,022	Cardiology	18,349	Cardiology	11,793
Cardiology	9,098	Internal Medicine	14,622	Internal Medicine	10,736
Physical Therapy	5,313	Family Medicine	11,150	Ophthalmology	4,984
Emergency	4,553	Ophthalmology	7,433	Emergency	3,223
Ophthalmology	4,454	Emergency	5,454	Radiology	2,482
Internal Medicine	3,657	Radiology	4,836	Urology	2,279
Radiology	3,376	Urology	4,561	Dermatology	1,945
General Surgery	3,215	General Surgery	3,561	General Surgery	1,882
Gynecology	3,030	Pulmonary	3,081	Audiology	1,538
Urology	2,886	Dermatology	3,017	Orthopedics	1,445
Occupational Therapy	2,602	Endocrinology	2,694	Pulmonary	1,435
Dermatology	2,301	Orthopedics	2,590	Otolaryngology	1,419
Orthopedics	2,237	Physical Therapy	2,586	Physical Therapy	1,351
Endocrinology	2,117	Otolaryngology	2,239	Vascular	1,272
Gastroenterology	2,018	Vascular	2,062	Endocrinology	1,053
APU	1,705	APU	1,792	Neurology	1,038
Rheumatology	1,649	Gynecology	1,765	Oncology	953
Otolaryngology	1,648	Neurology	1,741	APU	896
Neurology	1,642	Oncology	1,688	Nephrology	818
Optometry	1,590	Gastroenterology	1,570	Rheumatology	799
Pulmonary	1,569	Rheumatology	1,507	Family Medicine	734
Allergy	1,332	Audiology	1,463	Gastroenterology	599
Infectious Disease	1,056	Nephrology	1,315	Social Work	568
Nephrology	1,035	Occupational Therapy	982	Gynecology	558
Oncology	1,011	Infectious Disease	968	Infectious Disease	449
Vascular	961	Allergy	941	Occupational Therapy	387
Orthotics	947	Hematology	878	Speech	369
Hematology	919	Social Work	822	Hematology	364
Audiology	835	Orthotics	719	Orthotics	315
Nutrition	728	Nutrition	668	Nutrition	215
Podiatry	717	Pain Management	534	Pain Management	204
Pain Management	573	Neurosurgery	530	Allergy	181
Psychology	461	Podiatry	449	Psychiatry	178
Psychiatry	417	Psychology	395	Podiatry	177
Social Work	415	Speech	386	Neurosurgery	140
Neurosurgery	411	Psychiatry	327	Optometry	125

Plastic Surgery	281	Optometry	321	Interventional Rad	118
Speech	250	Interventional Rad	232	Psychology	93
Preventive Medicine	181	Plastic Surgery	216	Plastic Surgery	82
Interventional Rad	172	Preventive Medicine	214	Cardio thoracic	66
Cardio thoracic	113	Cardio thoracic	212	Preventive Medicine	38
Flight Medicine	103	Flight Medicine	39	Flight Medicine	4
Chiropractic	87	Pediatric	16	Pediatric	2
Public Health	38	Miscellaneous	7	Obstetrics	1
Miscellaneous	36	Obstetrics	2	Miscellaneous	-
Pediatric	18	Public Health	2	Chiropractic	-
Obstetrics	14	Chiropractic	-	Pediatric Surgery	-
Pediatric Surgery	-	Pediatric Surgery	-	Public Health	-
Total	92,793		110,936		59,308

Source: Original Data taken from Edward & Parkhurst, 2004

Table D4.

FY 03 Appointment Type by Age Range 85 to 120

Clinic Category	85-120
Cardiology	2,343
Internal Medicine	2,183
Ophthalmology	1,192
Emergency	1,089
Urology	544
Dermatology	535
Physical Therapy	504
Audiology	492
Radiology	423
General Surgery	366
Otolaryngology	347
Orthopedics	308
Pulmonary	243
Neurology	187
Vascular	183
Social Work	181
Endocrinology	155
APU	152
Oncology	150
Gastroenterology	141
Nephrology	104
Family Medicine	102
Infectious Disease	86
Rheumatology	82
Hematology	61
Speech	54
Orthotics	53
Gynecology	51
Pain Management	47
Occupational Therapy	44
Nutrition	40
Neurosurgery	36
Psychiatry	30

Optometry	28
Podiatry	28
Psychology	16
Plastic Surgery	14
Cardio thoracic	12
Allergy	5
Public Health	5
Flight Medicine	3
Interventional Rad	2
Pediatric	1
Miscellaneous	-
Chiropractic	-
Obstetrics	-
Pediatric Surgery	-
Preventive Medicine	-
Total	12,622

Source: Original Data taken from Edward & Parkhurst, 2004

Appendix E

Table E1.

Top 25: Appointments by Defense Medical Information System (DMIS) Outside San Antonio

FY 04 As of Jan

PCM DMIS	Facility Name	Location	PCM Region Code	Number of Appointments	% of Total
0114	47th Medical Group	Laughlin AFB, TX	06	788	9%
0110	Darnall Army Community Hospital	Ft Hood, TX	06	652	7%
0112	7th Medical Group	Dyess AFB, TX	06	398	4%
0113	82nd Medical Group	Sheppard AFB, TX	06	366	4%
6014	Charles Moore Health Clinic	Ft Hood, TX	06	331	4%
0364	17th Medical Group	Goodfellow AFB, TX	06	297	3%
0118	Naval Hospital Corpus Christi	Corpus Christi, TX	06	236	3%
0042	96th Medical Group	Eglin AFB, FL	04	225	2%
7236	Bennett Family Care Clinic	Ft Hood, TX	06	220	2%
0073	81st Medical Group	Keesler AFB, MS	04	200	2%
0085	27th Medical Group	Cannon AFB, NM	07	177	2%
7906	Remote 06		06	166	2%
1601	Troop Medical Clinic 14	Ft Hood, TX	06	165	2%
0247	Monterey Army Community Hospital	Monterey, CA	10	154	2%
0064	Bayne-Jones Army Community Hospital	Ft Polk, LA	06	153	2%
0098	Reynolds Army Community Hospital	Ft Sill, OK	06	149	2%
0051	78th Medical Group	Robins AFB, GA	03	133	1%
0037	Walter Reed Army Medical Center	Washington, DC	01	125	1%
0338	71st Medical Group	Vance AFB, OK	06	123	1%
1592	Monroe Consolidated	Ft Hood, TX	06	109	1%
0078	55th Medical Group-Ehrling Bergquist Hospital	Offutt AFB, NB	08	103	1%
7139	16th Medical Group	Hurlburt Field, FL	04	101	1%
Subtotal				5,371	59%
Other				3,808	41%
GRAND TOTAL				9,179	100%

Source: Original Data taken from Edward & Parkhurst, 2004

Table E2.

Number of Appts by DMIS Outside San Antonio for FY04 as of Jan 04

DMIS	Facility Name	Region	Appts
0037	WALTER REED ARMY MEDICAL CENTER	01	125
0066	89TH MEDICAL GROUP	01	97
0069	KIMBROUGH AMBULATORY CARE CENTER	01	78
0413	11TH MEDICAL GROUP	01	68
7901	REMOTE 01	01	40
6200	FAMILY HEALTH CENTER FAIRFAX	01	24
0067	NNMC BETHESDA	01	19
0086	KELLER ACH	01	18
7154	OCCUP HEALTH CLINIC FT. DIX	01	18
0123	DEWITT ACH	01	17
0256	DILORENZO TRICARE HEALTH CLINIC	01	17
0326	305TH MEDICAL GROUP	01	14
0036	436TH MEDICAL GROUP	01	14
0390	ANDREW RADER AHC	01	14
6901	MANAGED CARE CONTRACTOR-REGION 01	01	9
7113	CONNOR CTMC	01	8
0299	BMC NAS BRUNSWICK	01	6
0352	DUNHAM AHC	01	5
0322	BMC COLTS NECK EARLE	01	3
0035	NACC GROTON	01	3
6201	FAMILY HEALTH CENTER WOODBRIDGE	01	2
0385	NMCL QUANTICO	01	2
0310	66TH MEDICAL GROUP	01	1
0401	BMC LAKEHURST	01	1
7298	DILORENZO TRICARE HEALTH CLINIC ARLINGTON	01	1
0330	GUTHRIE AHC	01	1
0308	KIRK AHC	01	1
1815	MOLOGNE TMC	01	1
6305	NACC GROTON	01	1
0321	NACC PORTSMOUTH	01	1
		Region 01 Total	609
7902	REMOTE 02	02	79
0120	1ST MEDICAL GROUP	02	55
0090	4TH MEDICAL GROUP	02	35
7143	AHC ROBINSON	02	13
1992	BMC BLDG 15 MCB CAMP LEJEUNE	02	13
0335	43RD MEDICAL GROUP	02	12
0089	WOMACK AMC	02	12
6317	NMC PORTSMOUTH	02	11
6311	NH CAMP LEJEUNE	02	7

6902	MANAGED CARE CONTRACTOR-REGION 02	02	6	
7294	CLARK HEALTH CLINIC	02	4	
0121	MCDONALD ACH	02	4	
0381	BMC YORKTOWN	02	3	
0122	KENNER AHC	02	3	
6221	TRICARE OUTPATIENT CHESAPEAKE	02	3	
0387	BMC OCEANA	02	2	
7286	JOEL AHC-FT. BRAGG	02	2	
0124	NMC PORTSMOUTH	02	2	
0378	BMC LITTLE CREEK	02	1	
0508	BMC NAVSTA SEWELLS	02	1	
0091	NH CAMP LEJEUNE	02	1	
6214	TRICARE OUTPATIENT CLINIC VA BEACH	02	1	
		Region 02 Total		270
0051	78TH MEDICAL GROUP	03	133	
0045	6TH MEDICAL GROUP	03	55	
0050	347TH MEDICAL GROUP	03	47	
0356	437TH MEDICAL GROUP	03	44	
0101	20TH MEDICAL GROUP	03	30	
6903	MANAGED CARE CONTRACTOR-REGION 03	03	25	
1550	TMC-4-STOCKADE-FT. GORDON	03	18	
0047	EISENHOWER AMC	03	16	
0046	45TH MEDICAL GROUP	03	11	
6307	NH JACKSONVILLE	03	11	
1563	TMC-2-FT. STEWART	03	5	
0049	WINN ACH	03	5	
0511	BMC WPNSTA CHARLESTON	03	4	
1552	TMC-2-FT. BENNING	03	4	
0517	BMC KEY WEST	03	3	
0105	MONCRIEF ACH	03	3	
3031	USS JOHN F KENNEDY (CV67)	03	3	
0039	NH JACKSONVILLE	03	2	
1564	TMC-3-FT. STEWART	03	2	
0273	AHC FT. MCPHERSON	03	1	
7903	REMOTE 03	03	1	
1316	WINDER FPC	03	1	
		Region 03 Total		424
0042	96TH MEDICAL GROUP	04	225	
0073	81ST MEDICAL GROUP	04	200	
7139	16TH MEDICAL GROUP	04	101	
0043	325TH MEDICAL GROUP	04	37	
0004	42ND MEDICAL GROUP	04	33	
0074	14TH MEDICAL GROUP	04	28	
1990	BMC NAVSUPPACT EAST BANK	04	22	
6904	MANAGED CARE CONTRACTOR-REGION 04	04	16	
0513	BMC NTTC PENSACOLA	04	7	
0038	NH PENSACOLA	04	4	
0107	BMC NSA MID-SOUTH	04	3	
0001	FOX ARMY HEALTH CENTER	04	3	
0316	BMC GULFPORT	04	2	

0262	BMC NATTC PENSACOLA	04	1	
0003	LYSTER ACH	04	1	
7904	REMOTE 04	04	1	
		Region 04 Total		684
0056	NH GREAT LAKES	05	44	
0055	375TH MEDICAL GROUP	05	41	
0095	74TH MEDICAL GROUP	05	36	
1506	AVIATION MEDICINE CLINIC	05	13	
0061	IRELAND ACH	05	10	
6905	MANAGED CARE CONTRACTOR-REGION 05	05	10	
7307	LA POINTE HEALTH CLINIC	05	6	
7905	REMOTE 05	05	6	
0060	BLANCHFIELD ACH	05	5	
1237	TMC CONTRACT SPARTA	05	1	
		Region 05 Total		172
0114	47TH MEDICAL GROUP	06	788	
0110	DARNALL ACH	06	652	
0112	7TH MEDICAL GROUP	06	398	
0113	82ND MEDICAL GROUP	06	366	
6014	CHARLES MOORE HEALTH CLINIC-FT HOOD	06	331	
0364	17TH MEDICAL GROUP	06	297	
0118	NH CORPUS CHRISTI	06	236	
7236	BENNETT FAMILY CARE CLINIC-FORT HOOD	06	220	
7906	REMOTE 06	06	166	
1601	TMC-14-FT. HOOD	06	165	
0064	BAYNE-JONES ACH	06	153	
0098	REYNOLDS ACH	06	149	
0338	71ST MEDICAL GROUP	06	123	
1592	MONROE CONSOLIDATED-FT. HOOD	06	109	
0656	BMC INGLESIDE	06	91	
0097	97TH MEDICAL GROUP	06	85	
0096	72ND MEDICAL GROUP	06	74	
0369	BMC KINGSVILLE	06	66	
0062	2ND MEDICAL GROUP	06	46	
0013	314TH MEDICAL GROUP	06	32	
6316	NH CORPUS CHRISTI	06	25	
1599	TMC-12-FT. HOOD	06	24	
0370	BMC FORT WORTH	06	21	
1597	TMC-10-FT. HOOD	06	10	
		Region 06 Total		4,627
0085	27TH MEDICAL GROUP	07	177	
0084	49TH MEDICAL GROUP	07	80	
0079	MICHAEL O'CALLAGHAN FEDERAL HOSPITAL	07	77	
1617	TMC MEDICAL EXAM STATION-FT. BLISS	07	69	
0009	56TH MEDICAL GROUP	07	46	
0083	377TH MEDICAL GROUP	07	34	
0108	WILLIAM BEAUMONT AMC	07	33	
0010	355TH MEDICAL GROUP	07	31	

0008	R W BLISS ARMY HEALTH CENTER	07	27	
7908	REMOTE 08	07	10	
0327	AHC MCAFEE	07	4	
6907	MANAGED CARE CONTRACTOR-REGION 07	07	1	
		Region 07 Total		589
0078	55TH MEDICAL GROUP	08	103	
0077	341ST MEDICAL GROUP	08	76	
0033	10TH MEDICAL GROUP	08	40	
0059	22ND MEDICAL GROUP	08	39	
0119	75TH MEDICAL GROUP	08	33	
0106	28TH MEDICAL GROUP	08	30	
0094	5TH MEDICAL GROUP	08	26	
0252	10TH MEDICAL GROUP	08	25	
0053	366TH MEDICAL GROUP	08	25	
0076	509TH MEDICAL GROUP	08	25	
0129	90TH MEDICAL GROUP	08	25	
0032	EVANS ACH	08	24	
0075	L. WOOD ACH	08	24	
6908	MANAGED CARE CONTRACTOR-REGION 08	08	16	
0058	MUNSON ARMY HEALTH CENTER	08	15	
0093	319TH MEDICAL GROUP	08	11	
7289	CTMC-FT. RILEY	08	9	
7200	460 MDS-BUCKLEY AFB	08	7	
7908	REMOTE 08	08	5	
7293	TMC 10-FT. CARSON	08	3	
7300	TMC 9-FT. CARSON	08	2	
0057	IRWIN ACH	08	1	
		Region 08 Total		564
0701	BMC NAVSTA SAN DIEGO	09	22	
0018	30TH MEDICAL GROUP	09	17	
0029	NMC SAN DIEGO	09	13	
6303	NMC SAN DIEGO	09	11	
0019	95TH MEDICAL GROUP	09	8	
0248	61ST MEDICAL SQUADRON	09	7	
6909	MANAGED CARE CONTRACTOR-REGION 09	09	6	
7909	REMOTE 09	09	6	
0024	NH CAMP PENDLETON	09	4	
0233	BMC CORONADO	09	3	
6301	NH CAMP PENDLETON	09	3	
1659	BMC SAN ONOFRE MCB	09	2	
0269	BMC YUMA	09	2	
6207	TRICARE OUTPATIENT-CLAIRMONT (SD 1)	09	2	
0131	WEED ACH	09	2	
0210	BMC EDSON RANGE ANNEX	09	1	
0232	BMC MCAS MIRAMAR	09	1	
0026	NACC PORT HUENEME	09	1	
0030	NH TWENTYNINE PALMS	09	1	
6216	TRICARE OUTPATIENT-OCEANSIDE	09	1	
		Region 09 Total		113
0247	MONTEREY AHC	10	154	

0014	60TH MEDICAL GROUP	10	45	
0015	9TH MEDICAL GROUP	10	9	
6910	MANAGED CARE CONTRACTOR-REGION 10	10	1	
0028	NH LEMOORE	10	1	
		Region 10 Total		210
0395	62ND MEDICAL GROUP	11	30	
0128	92ND MEDICAL GROUP	11	27	
0125	MADIGAN AMC	11	21	
6318	NH BREMERTON	11	6	
6911	MANAGED CARE CONTRACTOR-REGION 11	11	1	
0126	NH BREMERTON	11	1	
6319	NH OAK HARBOR	11	1	
1649	OKUBO FAMILY PRACTICE CLINIC-FT LEWIS	11	1	
1646	TMC-1-FT. LEWIS	11	1	
		Region 11 Total		89
0006	3RD MEDICAL GROUP	12	66	
0287	15TH MEDICAL GROUP	12	21	
6320	NMCL PEARL HARBOR	12	19	
0280	NMCL PEARL HARBOR	12	11	
0203	354TH MEDICAL GROUP	12	10	
0005	BASSETT ACH	12	7	
0285	BMC MCAS KANEOHE BAY	12	5	
7916	REMOTE AK-ALASKA	12	5	
0052	TRIPLER AMC	12	4	
0437	SCHOFIELD BARRACKS AHC	12	2	
0534	TMC-1-SCHOFIELD 25TH	12	2	
0284	BMA NAVCAMS EASTPAC	12	1	
		Region 12 Total		153
0805	52ND MEDICAL GROUP	13	67	
0806	435TH MEDICAL GROUP	13	64	
0623	NH KEFLAVIK	13	31	
0633	48TH MEDICAL GROUP	13	22	
6747	USDAO CAIRO	13	19	
0618	NH ROTA	13	14	
0629	65TH MEDICAL GROUP	13	12	
0635	39TH MEDICAL SQUADRON	13	7	
0808	31ST MEDICAL GROUP	13	6	
8996	AHC BUTZBACH	13	5	
1126	AHC BAUMHOLDER	13	4	
0800	469TH MEDICAL FLIGHT	13	3	
0653	422 ABS MEDICAL FLIGHT	13	2	
1144	AHC BABENHAUSEN	13	2	
8998	AHC DARMSTADT	13	2	
8992	AHC DEXHEIM	13	2	
1127	AHC KITZINGEN	13	2	
1153	BMC CAPODICHINO	13	2	
0799	470 MEDICAL FLIGHT	13	1	
8982	AHC BAD AIBLING	13	1	
1135	AHC FRIEDBERG	13	1	

8995	AHC HANAU	13	1	
1017	AHC VILSECK	13	1	
0606	HEIDELBERG MEDDAC	13	1	
0607	LANDSTUHL REGIONAL MEDCEN	13	1	
6703	MEDICAL AID STATION KLEIN BROGEL	13	1	
7234	MENWITH HILL MEDICAL CENTER	13	1	
6805	USDAO DOHA	13	1	
0609	WUERZBURG MEDDAC	13	1	
		Region 13 Total		277
0638	51ST MEDICAL GROUP	14	91	
0804	18TH MEDICAL GROUP	14	66	
0639	35TH MEDICAL GROUP	14	45	
0640	374TH MEDICAL GROUP	14	36	
0612	121ST GENERAL HOSPITAL	14	32	
8903	USAHC CAMP HUMPHREYS	14	20	
0637	8TH MEDICAL GROUP	14	16	
1157	USAHC CAMP CASEY	14	13	
0802	36TH MEDICAL GROUP	14	10	
0983	OTHER PACIFIC	14	10	
8916	USAHC-YONGSAN	14	7	
0621	NH OKINAWA	14	4	
8912	USAHC-CAMP RED CLOUD	14	4	
7032	BMC CAMP BUSH/COURTNEY	14	3	
8939	BMC CHINHEA	14	3	
0862	BMC EVANS-CAMP FOSTER	14	2	
0622	NH YOKOSUKA	14	2	
1156	USAHC CAMP STANLEY	14	2	
0625	BMC IWAKUNI	14	1	
0861	BMC MCAS FUTENMA	14	1	
0871	BMC NAVSTA GUAM	14	1	
0610	USA MEDDAC-CAMP ZAMA	14	1	
8917	USAHC-CAMP LONG	14	1	
8907	USAHC-CAMP WALKER	14	1	
		Region 14 Total		372
8924	AHC FT. BUCHANAN	15	13	
0971	CENTRAL AMERICA	15	6	
0615	NH GUANTANAMO BAY	15	4	
0616	NH ROOSEVELT ROADS	15	2	
7042	AIR STATION BORINQUEN	15	1	
		Region 15 Total		26
		Grand Total		9,179

Source: Original Data taken from Edward & Parkhurst, 2004

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